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APRIL 28, 1949


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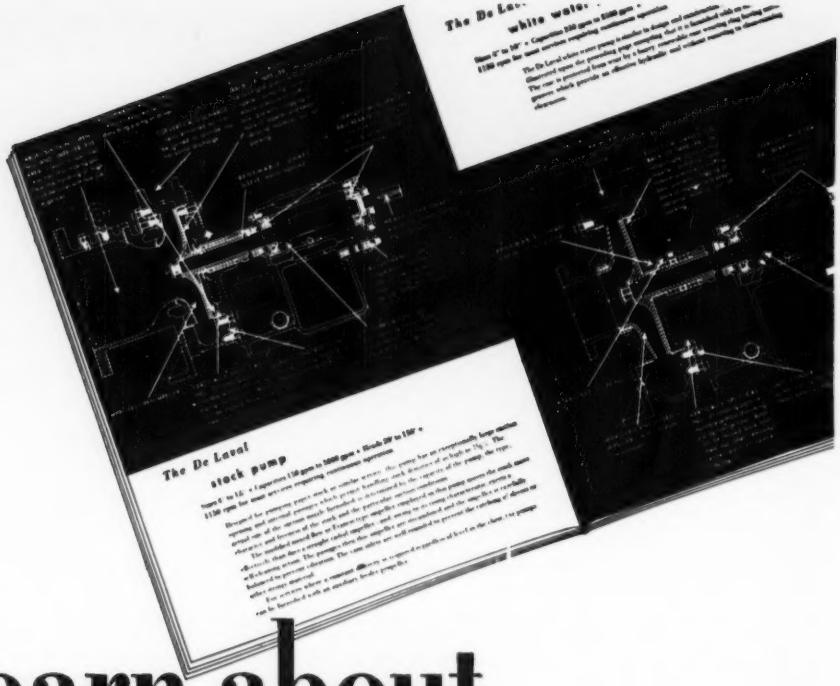


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Paper TRADE JOURNAL

**VOL. 128** **NO. 17**

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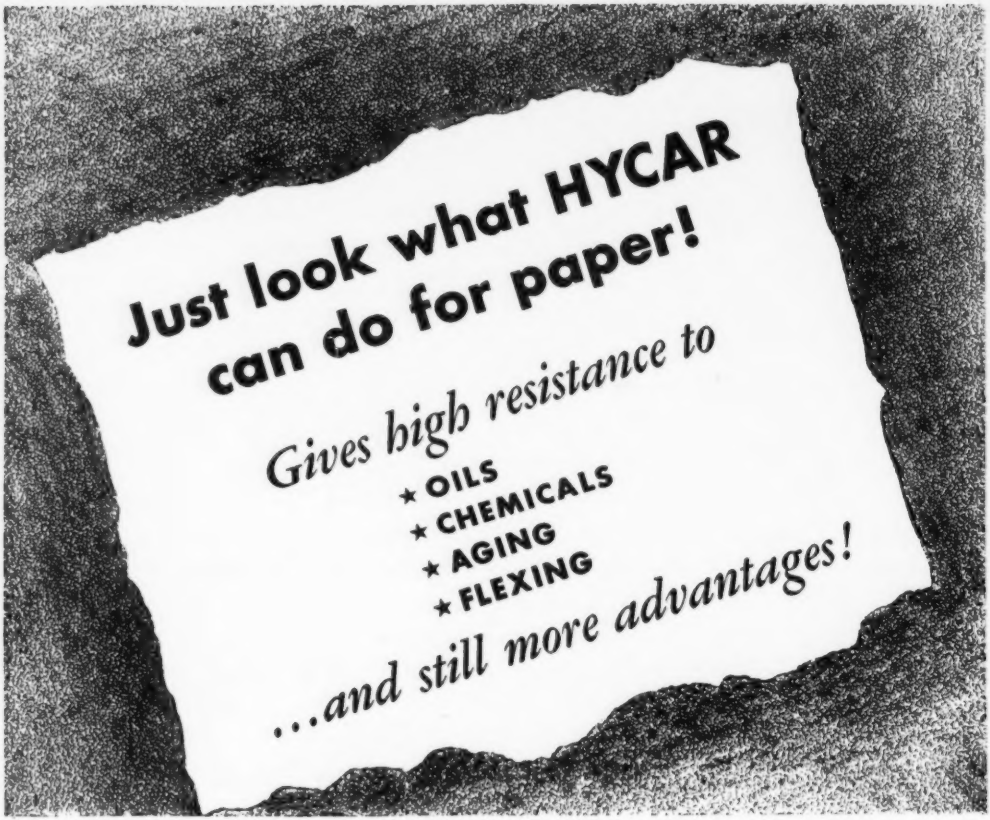


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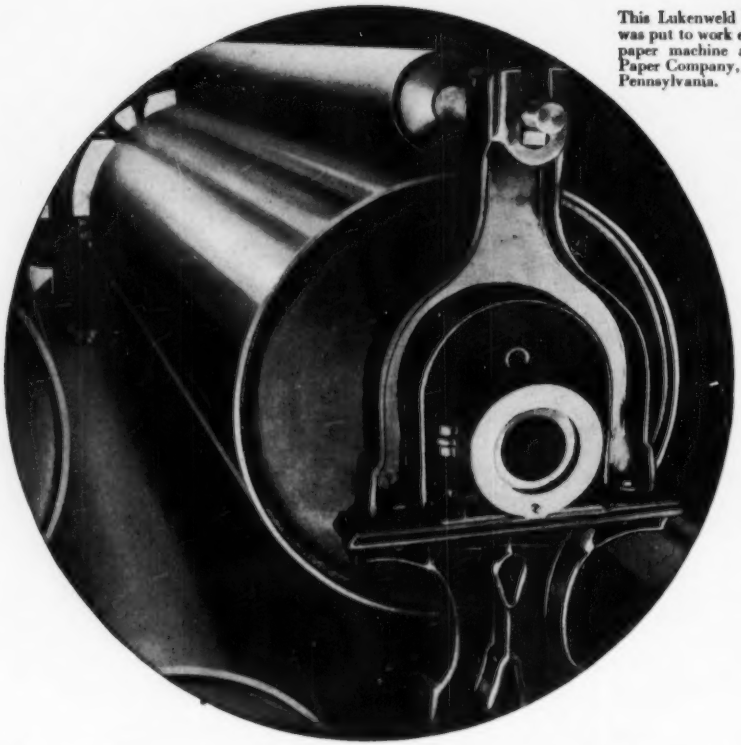

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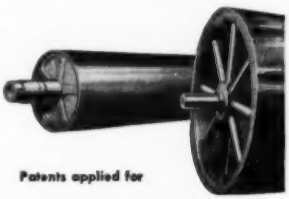

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Paper TRADE JOURNAL

APR. 28, 1949

VOL. 128, NO. 17

# Conference on World Pulp Problems Opens

***Windsor Hotel, Montreal, April 25 - May 5***

MONTREAL—Delegates from 28 wood pulp producing and consuming nations met for their first international conference here on April 25, with R. M. Fowler, president of the Canadian Pulp & Paper Ass'n., unanimously chosen as chairman. The appointment of Mr. Fowler was made on a motion by France, seconded by the United States. The conference, which is being held at the Windsor Hotel, will continue through May 5.

Edward G. Cale, associate chief, division of international resources, Department of State, has been named as chairman of the United States delegation. With him, as delegates, are Horace Richard Josephson, assistant chief of the division of foreign economics, Forest Service of the Department of Agriculture; Joseph L. Muller, chief, Forest Products Branch, Office of International Trade, Department of Commerce; W. Leroy Neubrech, chief, Pulp & Paper Section, Department of Commerce; and the following advisory group:

Alexander McCook Craighead, consultant, Economic Cooperation Administration; Corwin D. Edwards, chief economist, Federal Trade Commission; William L. Kilcoyne, first secretary, American Embassy, Ottawa; and Oliver M. Porter, executive secretary, U.S. Pulp Producers' Ass'n., New York.

Speaking at the opening session of the Conference on April 25, Norris E. Dodd, director general of the Food and Agriculture Administration of the United Nations, 1201 Connecticut avenue, Washington, D. C., who was temporary chairman of the conference, said in part:

I am grateful indeed to the Canadian Government for acting as host to this meeting and to the Canadian Pulp & Paper Ass'n., for the facilities placed at our disposal. No person could enter this room without being impressed with the attendance of this meeting. I see no empty seats behind the table signs of the countries expected at this meeting, and more important even, I know that we have in this room today many of the real leaders in government and industry responsible for the production, distribution, and the consumption of wood pulp and the many products derived from this important 20th Century raw material.

You all know that FAO's Charter and our arrangements with UN and other specialized agencies entrust FAO with wood pulp as a primary forest product. This assignment corresponds to FAO's basic concept that all forest industries and products form an inseparable whole which can only be organized for the maximum benefit of producers and consumers if they are considered in relation to each other and to the forests, the largest renewable pool of raw materials which nature has placed at the disposal of mankind.

It is a frequent misunderstanding of FAO's role that we are only concerned with forest management and conservation, or at best, with the conversion of logs into sawn timber. The authors of FAO's Charter have understood that such separation and the single product approach on which it is based stands in the way of any full utilization of the annual forest crop. This Conference constitutes therefore an important demonstration that FAO not only claims responsibility for all primary forest products but is also ready to live up to this assignment.

In taking up the problems of wood pulp we do not intend to confine ourselves to the interests of producers and the workers engaged in this rapidly expanding industry. We are equally concerned with the ever-growing significance of pulp and paper for the welfare of the world's consumers.

### Time Appropriate

The time for a world conference on wood pulp could not have been better chosen. At the end of the war, wood pulp, like all other commodities, was scarce. More of it was needed, but there wasn't very much that an international organization could have done to speed this process which depended to a large degree on the initiative and the ingenuity of industrial leaders and workers. The pulp producers of the world have lived up to their challenge so well that for the past months some of them have been faced with increasing difficulties in selling their products and especially in securing the prices which they had earlier regarded as necessary to cover production cost. The same people who a year ago were talking about a continued pulp shortage wonder today whether we are not approaching a pulp surplus or at least a point where capacity has caught up with effective demand. It is your role, not mine, to answer this troublesome question in a way which will help producers and consumers to formulate their further policies. Personally I would believe that the present difficulties are typical short-term issues which should lend themselves to rather easy adjustment, and I have no doubt that if my assumption is correct this Conference will be able to propose the measures needed to achieve such adjustment.

**R. M. FOWLER**
**President—Canadian Pulp & Paper Ass'n.**
**Conference Chairman**

In looking over the worksheets and statistics prepared for this Conference, I was strongly impressed by the fact that last year Europe was only able to consume 70 percent as much pulp as in 1937, that the countries of the Far East are still down 25 percent of prewar, and that during the same decade, North American pulp consumption has increased by more than 50 percent.

These figures are in line with the things which I noticed during my recent trip around the world. Only in the cities did I see newspapers and those were generally small in size and the paper poor in quality, although I must admit that the *quality of the contents* frequently compared favorably with the papers I read at home. Paper for wrapping and packaging was not only scarce but frequently unavailable.

### Currency Shortages

Shortage of foreign currencies is still compelling governments to ration paper consumption and I fear that this situation will continue for some time. On the other hand, past experience shows that whenever supplies are adequate and commodities grow less expensive, the more fortunate or developed nations always find a way of taking advantage of such a situation and

*(Continued on page 42)*

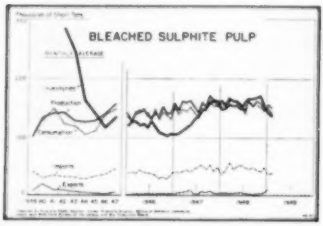
# April Pulp, Paper and Board Industry Report

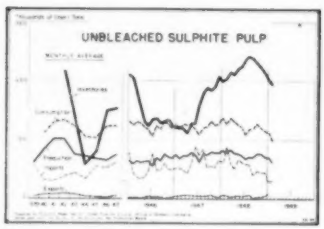
**By W. LEROY NEUBRECH**

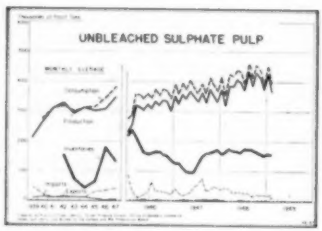
**Chief, Pulp and Paper Section, Office of Domestic Commerce, U. S. Department of Commerce**

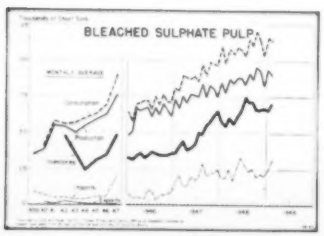
What will be the volume of paper and board production and consumption in the year 1949? That seems to be the question uppermost in the minds of the entire industry, from the mill executive down through the converter and distributor.

The first two months of 1949 compared with the same period of 1948 may offer some indication of the answer. The aggregate output of all types of paper and board in the first two months of this year was 6 percent less than in the identical period of 1948, with paper as a group declining 6.3 percent and paperboard falling off 4.6 percent.



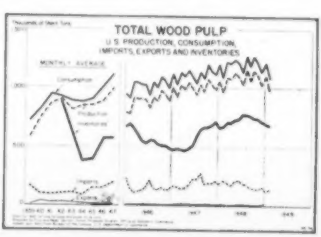




However, a further analysis of the various grade groups discloses wide variations in the production level of this year compared with a year ago. Newsprint recorded a gain of over 19 percent, largely the result of the opening of a new machine in the Lufkin mill in Texas and the complete switch over to newsprint by the Oregon City mill in Oregon. The only other paper group showing an increase was coarse papers, which was 0.6 percent greater than in 1948. This may be explained, in part at least, by the fact that only recently has the market for most grades of coarse papers been satisfied and production, showing an uptrend throughout 1948, leveled off in the first two months of 1949.

All other groups of paper and board production declined from a year ago. A drop of 17 percent was recorded for fine paper; 21 percent for absorbent paper; and nearly 29 percent for building paper. In the field of paperboard, set-up boxboard and miscellaneous board declined 6 percent; folding boxboard 4.5 percent, and container board 3.8 percent. Building board followed the trend of building papers, but to a somewhat lesser degree, with a decline of 13.5 percent. In the case of building papers and building boards, the decline may be explained by the slackening in residential and farm construction.

For the most part, larger percentage declines were noted in the paper or board groups where supplies tended to balance out demands during the late spring, summer or fall of 1948 and displayed a tendency to level off or decline since then. Printing grades as used by magazine and book publishers and commercial printers, as well as the types of papers usually flowing through wholesale distributors, show declines from 3 to 8 percent. There has been a further tendency during the past several months to move out inventories of below standard quality papers and at the same time reduce inventories in the aggregate.




Overall, it is believed that for most grades of paper and board, inventories in the hands of converters, printers and publishers, distributors and other consumers are now generally at a healthy level relative to sales or consumption. In fact, in many fields of consumption, including wholesale distribution, it is believed that inventories are at a substantially lower ratio to sales than was common in the prewar period. The relatively small accumulation of paper and board stocks at mills in the past few months was probably much smaller than the decrease in stocks in the distribution and consumption field. As a consequence, it would appear that overall current paper production is moving into consumption, having reached, for the time being, a generally stabilized position with no further substantial changes of inventories, either additions or depletions, likely for the immediate future.

There appear to be other factors indicating a stabilization in the production and consumption of paper and board or perhaps a near-future likelihood of an increase above the recent level. For example, in January and February, 1949, a modest increase was recorded over the low 1948 third quarter percentage of retail sales of nondurable goods when compared to total retail sales. An equivalent percentage decrease was shown in the retail sales of durables. It is in the production and distribution of nondurables where a large part of the paper production is consumed.

Furthermore, with regard to the entire United States economy, employment and personal income in the aggregate are holding up well. Total civilian employment turned up in March and, on the whole, was above the level of March, 1948. The decline in prices, first evident last year in agricultural items, has now penetrated into an increasing number of industries and manufactured goods, including many grades of paper and board. These price adjustments were to be expected following a prolonged period of shortages.

Some segments, notably the nonintegrated paper mills, have felt the slackened demand for paper and board more than the integrated or partially integrated mills. This is evidenced by the Census data which shows that consumption of wood pulp by all paper and board mills in the first two months of 1949 was practically identical to that in the same two months of last year, whereas consumption of market

wood pulp by nonintegrated mills declined 21 percent.

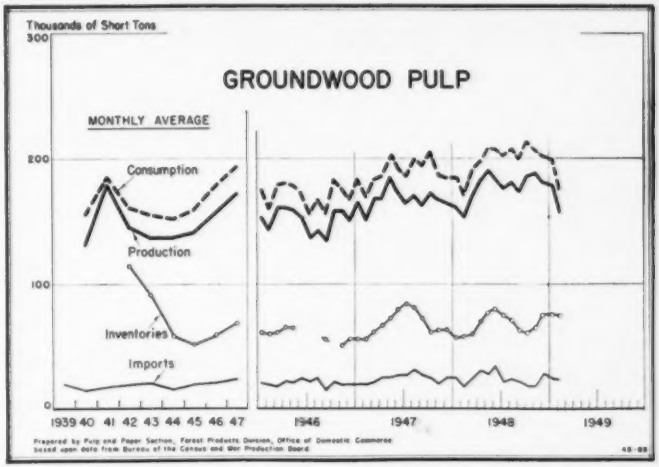
Perhaps the nonintegrated mills are entering a more favorable period than that of several months ago as a result of substantially lower contract price quotations on both domestic and imported market wood pulp. Recent trade information points to still lower prices on some grades of spot market pulp. Total wood pulp imports in the first two months of this year were 33 percent below a year ago while imports of market wood pulp dropped 34.4 percent. Wood pulp inventories at pulp and paper mills at the end of February were about 1 percent greater than at the end of February, 1948, whereas inventories of market wood pulp dropped about 8 percent in like comparison.

The figures for the first two months of 1949 further disclose a continuation of the trend toward higher quality paper and board. Production of paper and board was down six percent whereas wood pulp consumption was approximately equal to last year's and waste paper consumption dropped 21 percent.

### Wood Pulp

The wood pulp market probably has been more unsettled in recent weeks than the paper or board market. Soon after the 1948 midyear easing in demand for many grades of paper or board produced by the pulp-purchasing paper mills there was an equivalent lack of interest in pulp buying at the peak prices then prevailing, especially the "out-of-line" north European quotations. It's an old story now that starting with European fourth quarter lowered quotations for United States delivery, followed by still lower prices on some grades for first quarter 1949 delivery, that the reductions were tardily timed with the result that Canadian and domestic stocks were offered for the same periods at more attractive prices. As the result of new lowered north European contract prices for second quarter 1949 delivery, the general picture is that for many United States pulp-purchasing paper mills the delivered contract prices on domestic, Canadian and north European pulps are approximately the same. On the other hand, market pulp mills selling on contract, whether they be domestic, Canadian or European, are encountering much greater competition from spot market offers of surplus pulp from many an integrated domestic mill where sales of paper have failed to keep pace with the pulp capacity of the operation.

On top of the growing competition to sell pulp, the non-integrated paper mills for the most part have suffered a greater loss in their paper sales and production than the integrated mills. As a consequence, paper mill consumption of market wood pulp in the first two months of 1949 was down 17 percent from the comparable period of 1948. Stocks of pulp at nonintegrated mills, it is true, have dropped eight

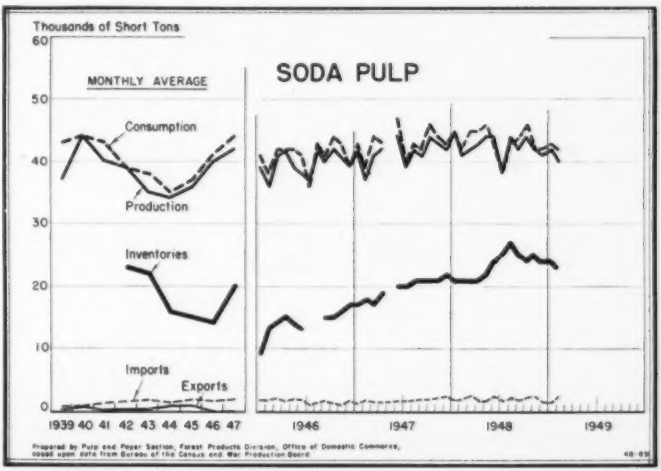



percent from a year ago February, but nevertheless stocks in ratio to monthly consumption have actually increased.

Perhaps the F.A.O. international wood pulp conference to be held in Montreal starting on April 25th is appropriately timed. The official agenda for the conference primarily calls for basic statistical considerations as to capacity, production, consumption, imports, and exports. The pulp industry representatives of various countries undoubtedly will discuss informally prevailing world conditions. Such an interchange of information as well as conjectures about the future may likely result in some enlightening observations with respect to the hypothetical projections expected to be made by the official government delegates from the various countries. The agenda calls for estimates for 1949, 1950 and 1955.

The prevailing uncertainty of the United States pulp market no doubt will be of major consideration by several of the participating countries. The United States is a potent factor in the world pulp picture, producing in 1947 over 40 percent of the total world pulp output, consuming over 50 percent of world supply and purchasing (importing) 47 percent of total world wood pulp exports. While the United States is still a relatively unimportant exporter of pulp, for the first time in peacetime history, United States and Canadian pulp has been underselling north European pulp in continental Europe, with substantial sales having been made in the German Bizone as well as other continental countries.

From the standpoint of studying prevailing market conditions in the world pulp trade it is noteworthy that, for the United States, greatly improved statistics on strictly market pulp as distinguished from pulp integrated with paper or board mills were developed



**Percent Distribution of Retail Sales by Kinds of Business**

(Based on seasonally adjusted data)

| Year and period | Durable goods stores | Nondurable goods stores | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total | Apparel | Drug | Eating | Food | Filling stations | Gen. merch. | Other |
| 1939 ..... | 24.7 | 75.3 | 7.8 | 3.7 | 8.4 | 24.2 | 6.7 | 15.4 | 9.2 |
| 1946 1st hf. . | 19.8 | 80.2 | 9.4 | 3.7 | 12.8 | 24.8 | 4.0 | 14.9 | 10.7 |
| 1946 2nd hf. . | 23.2 | 76.8 | 8.5 | 3.4 | 11.8 | 24.9 | 4.1 | 14.1 | 10.1 |
| 1947 1st hf. . | 25.1 | 74.9 | 8.0 | 3.2 | 10.9 | 25.2 | 4.2 | 13.6 | 9.8 |
| 1947 2nd hf. | 26.3 | 73.7 | 7.9 | 3.0 | 10.2 | 24.8 | 4.6 | 13.4 | 9.8 |
| 1948 1st hf. . | 27.4 | 72.6 | 7.6 | 2.9 | 9.8 | 24.8 | 4.9 | 12.9 | 9.7 |
| 1948 3rd qtr.. | 28.8 | 71.1 | 7.4 | 2.8 | 9.6 | 23.9 | 4.9 | 13.3 | 9.3 |
| 1948 Oct. ... | 28.1 | 71.9 | 7.9 | 2.8 | 9.6 | 24.5 | 4.8 | 13.0 | 9.3 |
| 1948 Nov. ... | 28.1 | 71.9 | 7.6 | 2.8 | 9.8 | 25.0 | 4.8 | 12.7 | 9.1 |
| 1948 Dec. ... | 28.1 | 71.9 | 7.8 | 2.7 | 9.6 | 24.5 | 4.7 | 13.4 | 9.2 |
| 1949 Jan. .. | 27.2 | 72.8 | 8.2 | 2.9 | 9.8 | 25.0 | 4.7 | 12.8 | 9.2 |
| 1949 Feb. ... | 28.2 | 71.8 | 7.5 | 3.0 | 9.8 | 25.2 | 5.0 | 12.4 | 9.0 |

Source: Office of Business Economics, U. S. Department of Commerce.

during World War II and these data have been continued on a monthly basis by the Bureau of the Census of the United States Department of Commerce. The statistics show month-to-month and year-to-year changes in market pulp domestic mill shipments, domestic mill receipts of domestic and imported market pulp, as well as consumption and inventories of market pulp. These data have been invaluable in arriving at conclusive observations in the pulp trade. Furthermore, data have been released 20 to 25 days after the month covered. Provided similar data were available promptly on other important pulp producing and pulp consuming countries, more accurate appraisals could be made by individual industry executives as to the status of the market. In particular, accurate data on market pulp stocks in the principal world markets would be most valuable.

The availability of the excellent current and annual pulp data in the United States is the result of cooperative efforts between the industry and its associations and the U. S. Department of Commerce. Presumably, a cooperative program as now proposed by the F.A.O. may result in improved and more timely world pulp data.

**Wood Pulp Imports First Two Months**

(In 1,000 short tons)

| Period | '49 | '48 | % Change '49 vs. '48 |
|---|---|---|---|
| Jan. .... ..... | 127 | 186 | — 31.7 |
| Feb. ..... ..... | 141 | 214 | — 34.1 |
| 2 months .... ..... | 268 | 400 | — 32.9 |

Source: Bureau of the Census, U. S. Department of Commerce.

### Waste Paper

The market for most grades of waste paper continues dull with no noteworthy changes beyond the conditions described in this report in previous few months. Consumption of waste paper by paper and board mills in the first two months of 1949 declined 21 percent below the same period of 1948 while stocks at the end of February were up 14 percent over a year ago. Current stocks of waste paper at mills are at a much higher ratio to consumption than they were at the end of February, 1948.

Not alone has the use of waste paper declined in the printing paper field as a consequence of both lowered production as well as the trend toward different types, but the first two months of 1949 show a sharp drop from a year ago in building papers in which considerable waste paper stock is used, as well as a six percent decline in set-up boxboard and a 4.5 percent decline in folding boxboard. The shift from jute to kraft liners over the past several months has led to a reduction in the consumption of waste paper.

Since prospects appear good that paper production and paper consumption has about reached the end of the current readjustment period in terms of quantity and quality of output, there is reason to believe that the end of the cloudy period for the waste paper trade may be in the offing.

The new simplified standards and practices on waste paper adopted by the National Ass'n. of Waste Material Dealers on March 22 should be most helpful in bringing more order to an industry suffering from sharply reduced demand, abundant supplies, and depressed prices.

# Forestry and Timber in India

MYSORE, India.—At the first Forestry and Timber Utilization Conference for Asia and the Pacific, held here recently, Jairamdas Daulatram, India's Food & Agriculture Minister, stressed the need for framing urgent plans for the rational integration of forest and agricultural policy so as to save the soil from progressive impoverishment.

Soil conservation and its integral relationship to the forest policy was a challenge which could no longer be ignored. The nations of the East had therefore to formulate a plan and act with prudence and promptness with a view to tapping the potentialities of forest wealth to raise the standard of living of the rural masses. While forests could and should serve the cities, it would be a proper and wise policy to let them serve primarily the rural areas wherein nature had set them, especially in South-East Asia.

In India the problem of soil erosion is no less grave than anywhere else, he said. It needed to be handled on a national basis, with a maximum of inter-provincial and state coordination.

"Our country," Mr. Daulatram declared, "is resolved to achieve freedom from imports of foodgrains by the end of 1951. The provinces and states are being approached to join in achieving this object of supreme national urgency. Though we are planning to concentrate on intensive cultivation with better use of water, manure and seeds, it would be unwise not to design the nation's program of soil conservation for simultaneous implementation."

## Earthquake Damage Toll

SEATTLE—Production was under way again by April 18 in the undamaged half of the West Coast Paper Co. plant which suffered severely in the Pacific Northwest's earthquake of April 13. President Richard Abrams estimated approximately three months will be required to repair the damage caused by collapse of one wall of the building. Between $25,000 and $30,000 worth of paper stock was ruined by the quake and subsequent salvage operations, Mr. Abrams said. All other paper plants in this area escaped with no more than minor damage.

**Pulp, Paper and Board Industry Trends**

First 2 months '49 vs. first 2 months '48

| Item | (Percent change) |
|---|---|
| Paper and board production—total all types .. ..... ..... | — 6.0 |
| Paper, total ..... | — 6.3 |
| Paperboard, total ..... | — 4.6 |
| Wood pulp production, total ..... | + 3.3 |
| Wood pulp consumption, total[1] ..... | + 0.2 |
| Market wood pulp consumption, total[1] | — 17.0 |
| Wood pulp inventories, total[2] ..... | + 0.7 |
| Market wood pulp inventories, total[2] | — 7.9 |
| Wood pulp imports, total ..... | — 32.9 |
| Market wood pulp imports, total[3] ... | — 34.4 |
| Waste paper consumption[1] ..... | — 21.0 |
| Waste paper inventories[2] ..... | + 13.7 |
| Pulpwood consumption ..... | + 3.5 |
| Pulpwood inventories[2] ..... ..... | + 19.0 |
| Wholesale paper merchants sales .... | — 12.0 |
| Wholesale paper merchants inventories[2] | + 14.0 |

[1] Consumption in paper and board manufacture only.

[2] Inventories, end of February. Wood pulp, waste paper, and pulpwood inventories at pulp mills and paper and board mills only.

[3] Receipts at paper and board mills of imported purchased pulp.

Source: Bureau of the Census, U. S. Department of Commerce.

# ATA's Nat. Classification Bd. Public Hearings

**By EDWIN CHESTER HASTINGS**

Edwin Chester Hastings Traffic Service, Pittsburgh, Pa.

The National Classification Board of the American Trucking Associations will hold three public hearings that representatives of the paper industry should attend. The meetings are scheduled to open at 10 a. m. at Hotel Governor Clinton, New York, May 12; Hotel Sherman, Chicago, May 17; and at 1424 Sixteenth street, N.W., Washington, D.C., May 20.

The purpose is to consider proposed changes in rules, descriptions, ratings, packing requirements, and minimum weights of the National Motor Freight Classification. The tariff governs shipments of every trucker in the country. Those planning to attend the hearings for the purpose of protesting or accepting the proposals on paper products are required to request an appointment for their plea to be heard. Application should be made to N. F. Behme, Jr., secretary, National Classification Board, 1424 Sixteenth street, N.W., Washington 6, D.C. Requests should consist of time allotment for presentation of facts in support or protest to the proposals on paper items and the effect on freight transportation by motor truck. Written arguments and exhibits should be furnished in *three* complete copies.

The proposed changes in the motor classification will be decided after the public hearings, upon consideration of available facts by the National Classification Board.

Some of the items booked for consideration in the hearings are of prime interest to the paper industry. For example, some shippers and manufacturers have requested insertion in the classification of the following description:

*Boxes or crates, including fibreboard, paper or pulpboard, bottles or cans: boxes: screw plate (tap or die), pressed wood, in boxes.*

Basis of justification, the new commodity and its density and value warrent ratings (classification) lower than accorded those made of wood. The class ratings proposed on less-truckload shipments is Class 3 (70 percent of the first class rate); truckload ratings are Class F in the East, Class 4 in South and West, this is about 55 percent of the first-class rate. The minimum weight proposed is 30,000 pounds.

There are many chemicals used in the paper industry whose present description in the classification does not properly describe the commodities. The ratings named do not reflect transportation characteristics as compared to other similar products. There are many "classic" examples of muddled listings and the tariff needs revision badly. Lack of clarification in the description of the items are the basis of wrong interpretation. One item that rings the bell is "laundry sour" and this is used by some motor carriers to list on the bill of lading for "dirty laundry" with rates assesed accordingly, under the impression the application is correct. The item is cited to illustrate that an identical situation can happen with shipments of paper articles. A term that sounds like it "might fit" may also be the wrong one with a higher rate than needed.

Chemical terms may be clear language to a chemist, but most rateclerks of motor carriers lack training in the field to qualify as interpreters. For this reason, simplicity in the classification should be the rule. Some shippers have proposed changes and test shipments have been made, the results will be made known in the hearings.

Some shippers are using containers authorized by the Interstate Commerce Commission and they want them specified with the items in the National Motor Freight Classification. As one example of a chemical, for dry sodium bisulphite, the present listing of bulk shipments is "in barrels or boxes, or in steel pails". The proposed change is as follows: "In bulk in 5-ply multiple wall paper bags, total basis weight not less than 280 lbs. Inner wall consisting of Vinylite coated paper, basis weight not less than 50 lbs.; two walls Kraft paper, basis weight for each not less than 50 lbs; one wall Kraft paper, basis weight not less than 60 lbs.; and one wall of Kraft paper, basis weight not less than 70 lbs.

**E. P. MAGEL**

—elected vice-president in charge of the Fine Paper Division of the National Paper Trade Ass'n., succeeding L. A. Ramaker, who was advanced to the presidency. . . Mr. Magel is president and general manager of the Crescent Paper Co., Indianapolis. . . Pictures of the other NPTA officers appeared on pages 12 to 14 in the April 7 issue.

The same commodity in bulk in 6-ply multiple wall moistureproof paper bags, total basis weight of paper 390 lbs., two plies 90 lbs., each; asphalt liner, 3 plies 50 lbs., each, and one ply 60 lbs. New weight not to exceed 100 lbs.

There is an item in the tariff that the National Classification Board intends to increase the ratings beyond a reasonable point unless the paper industry raise a voice of protest. Packing cushions or packing pads composed of shredded or macerated paper now shipped (a) in bundles, not burlapped are rated less-truckload Class 2 (85 percent); truckload Class F (55 percent) in the East, Class 5 in the South, Class 4 in the West, minimum weight 16,000. (b) In bales not machined pressed, in burlap bundles, or in boxes or crates, ltl Class 3 (70 percent), and the same truckload ratings as above. (c) In machine-pressed bales, ltl Class F in the East, Class 4 in the South and West; truckload are Class 5 in the East and West, Class 7 in the South, minimum weight 20,000 lbs.

The Board proposes to change this item to read:

(a) In packages, or in bales compressed to a density less than 6 lbs. per cubic foot. The rating to be increased for ltl to Class D1 (200 percent), tl increased to Class 1 (100 percent), minimum weight decreased to minimum weight factor 10.1, Rule 34 (10,000 lbs).

(b) In bales compressed to a density of 6 lbs. and over but less than 12 lbs. per cubic foot. The rating to be increased for ltl to Class 1 (100 percent); tl increased to Class 2 (85 percent), minimum weight increased to minimum weight factor 20.1, Rule 34, (20,000).

(b) In bales compressed to a density of 12 lbs. and over but less than 15 lbs. per cubic foot. The rating ltl Class 2 (85 percent); for tl Class 3 (70 percent), mwf 20.3.

(b) In bales compressed to a density of 15 lbs. per cubic foot and

over, Class 3 (70 percent) for ltl, and the same ratings for tl as

(c) with a minimum weight factor of 20.6.

The ltl rating of (c) to be dropped.

The purpose is to provide clarification with respect to packages being shipped, and to establish ratings and minimum weights properly related to density.

A new item proposed for consideration is:

Paper articles: curtains (cottage sets), paper, treated, printed, plasticized, cut, glued and/or sewn, in boxes.

The rate requested for ltl Class 3 (70 percent) and for tl class 40 (40 percent) in the East and West, Class 6 (27½ percent) in the South, minimum weight 30,000 lbs.

Purpose is for clarification and the specific description is to provide uniform aplication of ratings.

Another new item proposed is:

Paper articles: Risers, automobile inner doors trim, (paper backed with strips of pulpboard), on skids.

Ratings proposed are ltl Class F in the East, Class 4 in the South and West; tl ratings Class 6 in the East, Class 7 in the South, Class 5 in the West, minimum weight 20,000 lbs.

The purpose—the item is presently rated as "paper goods, NOI". The value and density warrent ratings lower than assigned to the description. Specific provision to provide uniformity in application of descriptions and ratings.

The increase in traffic of pliofilm products has justified the specific provision for adding the item for a special listing in the classification. These products made of pliofilm or pliofilm and paper or paperboard or cellulose film combined, including bags envelopes, pouches, sheets or wrappers, flat or folded flat, shipped in boxes, creates or wrapped bundles or rolls are proposed to have a rating of Class 3 (70 percent) for ltl; for tl Class 45 (45 percent) in the East and West, Class 5 in the South, minimum weight 30,000 lbs.

The carriers have proposed for consideration at these hearings changes in Rules 11 for the purpose of clarification and simplification of billing practices, and in Rule 12 the change is to provide revenue for transporting minimum shipments on the same basis as that accruing in connection with larger shipments.

# Rail-Truck Uniform B/L

WASHINGTON—Circular No. 3932, issued April 15, by the National Industrial Traffic League, states:

"Following many conferences, and after years of negotiation, the League's Bill of Lading Committee, E. J. Leger, chairman, has at last reached an understanding with the railroads and the motor highway carriers, through their respective bill of lading committees, regarding a so-called 'short-form' domestic straight bill of lading for use by shippers either for rail or motor highway shipments.

"After the various interested parties had reached a complete understanding as to the form of this bill of lading, a joint committee, representing the three groups, i.e., motor carriers, railroads and the League, presented the plan and a proposed classification rule authorizing the 'short-form' bill of lading, on April 7, to Commissioner Mitchell who has jurisdiction over bill of lading matters. Commissioner Mitchell, after submitting the proposal to the members of the Interstate Commerce Commission at its conference on April 11, advises he is authorized to say that the Commission 'has no present reason for suspension of the proposed rule, if and when same is filed.'

"It is our understanding that both the rail and the motor highway carriers, through their respective classification committees, will arrange promptly to publish and file with the I.C.C., through an appropriate supplement to their respective classifications, the new so-called 'short-form' bill of lading. As will be observed, this form will not carry on the back thereof the usual contract terms and conditions, but by statement on the face thereof reference is made to the terms and conditions of the uniform domestic straight bill of lading set forth in the governing classifications or tariffs. This new form is in harmony with the wishes of the League, and is in accordance with its instructions to our Bill of Lading Committee.

"There follows a proposed amendment to Classification Rule 1 which will be published, in substance, in the rail and motor carrier classifications:

"*'Shippers who print their own bills of lading may, at their option, instead of using the Uniform Straight Bill of Lading, print and use the Straight Bill of Lading—Short Form, set forth on page ??? hereof, which by reference makes all the terms and conditions of the Uniform Straight Bill of Lading a part thereof in case of a rail or rail-water shipment, in which event the transportation of the shipment shall be subject to all the terms and conditions of the Uniform Straight Bill of Lading the same as if it had been executed instead of the Straight Bill of Lading—Short Form.'*

"This so-called 'short-form' will *not* be furnished by the railroads or motor carriers, but is to be printed and furnished by shippers for their own use, and will be accepted by common carriers by rail and motor highway for shipments to move on straight domestic bills of lading. Carriers will still continue to furnish to interested parties copies of the so-called uniform straight bill of lading as published in the classifications. . . .

"It will be recalled that the League, on April 30, 1941, had filed a petition with the Interstate Commerce Commission seeking reopening of the Bill of Lading Case, Docket 4844, which petition was granted by the Commission but was held in abeyance pending the outcome of negotiations between the parties above mentioned. Negotiations were interrupted account of the war.

"With the publication and filing of the so-called 'short-form' bill of lading, the League will ask the Commission for permission to withdraw the pending petition in Docket No. 4844."

# Pacific Sec. TAPPI Meet

LONGVIEW, Wash.—More than 200 technical representatives of pulp and paper mills in the Pacific Northwest gathered here on April 8 for the annual meeting of the Pacific Section of TAPPI, overflowing the Korten's auditorium in an afternoon business session, and far exceeding preliminary attendance estimates for the evening dinner meeting at Hotel Monticello, where Dr. Erik Hagglund delivered the principal address of the day.

The Shibley award, an annual honorary TAPPI presentation for the best research paper presented during the year, was made to Vance L. Reynolds, of the Puget Sound Pulp & Timber Co., Bellingham. His paper was entitled, "Separation of Dirt from Unbleached Pulp by Centrifugal Type Classifiers."

Other Shibley award contestants included: Robert S. Towne, Fibreboard Products, Inc., Port Angeles. "Attaining Optimum Boiler Operation"; Everett J. Reichman, Simpson Logging Co., Shelton; "Evaluating Pulp for Soft Board Manufacture"; and J. A. Dykstra, Publisher's Paper Co., Oregon City, Ore.; "Furnish Measurement Problems of a Fast Newsprint Machine."

In an election of officers during the afternoon session, Walter Holzer, technical director of the Crown-Zellerbach Corp., Camas, was named chairman to replace Harold C. Wall, Longview, chemist of the Longview Fibre Co. Mr. Wall automatically became a member of the Pacific Coast Section executive committee.

Other officers named included: R. I. Theme, technical director of the Soundview Pulp Co., Everett, vice-chairman; R. M. True, of the General Dyestuff Corp., Portland, secretary-treasurer; and executive committeemen Eric Ericsson, of the Puget Sound Pulp & Timber Co., and Ben Natwick, of the Appleton Wireworks, Camas.

Mr. Reynolds, in his Shibley award paper, pointed out that the investigation upon which his paper was based "was not intended to be an exhaustive study of centrifugal dirt separation."

He also said results may differ at mills other than the one at which tests were run. His paper dealt with the possibilities of removing dirt from unbleached sulfite pulp by use of the Dirtec, manufactured by the Bird Machine Co., and of the Vortrap, manufactured by Nichols-Freeman. Results of the tests to determine dirt removal efficiency were presented, together with the effects of operating variables on classifier efficiency and capacity.

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*A reproduction of this incident from the fabulous life of Paul Bunyan—the forty-first of a series—will be sent on request. It will contain no advertising.*

# NESAC Re-elects Gill Secretary

### *Summer Box Car Shortage Seen*

BOSTON — Frank J. Gill, traffic manager of the Oxford Paper Co., Portland, Maine, was re-elected general secretary of the New England Shippers Advisory Committee at the annual meeting of that group at Hotel Statler, April 12-13.

Mr. Gill reported that statistics supplied by commodity committee chairmen in New England indicate a decrease of 10.9 percent in carloadings in this area during the current quarter as compared with the second quarter of 1948. Mr. Gill said that the heaviest decreases are in lumber and forest products, paper, paper board and prepared roofing, as well as in potatoes, coal and coke, machinery and boilers, petroleum and petroleum products, and gravel, sand and stone. "Each of these commodities," he said, "is expected to run 1,000 cars or more below the second quarter of 1948."

W. E. Callahan of the Ass'n. of American Railroads, Washington, D.C., forecast a serious box car shortage on the nation's railways during the coming summer when grain starts to move. He predicted a three percent decline in national second-quarter 1949 carloadings as against the 1948 loadings for the same quarter.

E. Paul Miller, New England district manager of the AAR, told the members that at present New England's railroads are in a position to meet all normal requirements for empties and that adequate service is available.

"Carloadings on New England roads," said Mr. Miller, "during the first 12 weeks of 1949 were down 16.8 percent below the same period last year. This is considerably greater than the reduction of 10.2 percent for the nation. During 1948, loadings in New England were down 8.6 percent while the figure for the country as a whole was 3.7 percent."

### Salmon Stream Study

JUNEAU, Alaska — A cooperative study of the effect of logging on salmon streams is being started by the Forest Service and the Fish and Wildlife Service, according to the office of Regional Forester B. Frank Heintzleman to provide information upon which to base logging regulations that will assure the safety of salmon spawning grounds.

Field activities started on April 4 when Ray Taylor and Lawrence Zach left for Ketchikan to make a preliminary reconnaissance of the streams and timbered areas to be studied as the initial step for the season's research.

The work will first be concentrated in the vicinity of Kasaan Bay on the east coast of Prince of Wales Island where headquarters will be established. Three pairs of streams will be set up for study this year, each pair consisting of a check stream where no logging will be done, and a "logged stream" for comparison.

The tests will consist primarily of comparing actual counts of the upstream run of adult salmon and the downstream migration of fry for each set of logged and unlogged streams. On one pair of basic study streams, water and air temperature, water level and precipitation will be recorded continuously and two-way fish-counting weirs will be installed. Other streams will have water stage recorders, rain gauges and migrant sampling stations. Weirs may be instaled farther upstream later to allow study of the upper reaches of the streams. Each stream will be mapped, the timber cruised on the watersheds and studies made of ecological, silt, and turbid conditions. The check streams will remain unlogged for several years or until results show fairly uniform conditions, after which some of them will be logged to give "before" and "after" conditions for the same area.

### County Reforestation

OPELIKA, Ala. — In Lee County, a tree planting project is underway to reforest every acre of waste land in the county. The Lee County "More Trees for Alabama" committee, the Opelika Rotary Club, and the Chamber of Commerce have inaugurated the project, and are pushing the program to success.

Euel A. Screws, chairman of the county "More Trees" committee, says the idea came to him last spring during the interest-arousing phase of the "More Trees" program. He persuaded the Rotary Club to buy two planting machines to be rented to farmers at 50 cents per thousand trees planted and ordered 250,000 seedlings from State Forester J. M. Stauffer.

Planting began immediately, and since January 20 all of the seedlings have been set out. A goal of 500,000 trees has been set for the 1949-50 planting season, with a one million figure being considered for 1950-51. This is only the beginning of the project which envisions the planting of 45,000 acres of waste land in the county which will require a minimum of 45,000,000 trees. To carry out this ambitious program, the Rotary Club now plans to buy two more planting machines for next year.

Chairman Screws states that the project has had the full cooperation of Rotary President Clifford Williams, County Agent W. H. Taylor, County Conservationist George Carter, Forest Ranger J. B. Coker, and the Chamber of Commerce. Local business firms are jointly sponsoring full page advertisements in the Opelika newspaper urging farmers to "grow more trees."

The More Trees for Alabama program launched first in Alabama in January, 1948, has since spread to Virginia and New Hampshire and is about to be inaugurated in the State of Washington. It is encouraged nationally by American Forest Products Industries, Inc., Washington, D. C., which is supported by the lumber, pulp and paper, and plywood industries of America.

The success of this project in Lee County has aroused interest in other counties. Delegations from practically every county in that area have visited planting operations, and Houston and Pike counties are preparing to launch similar planting programs next year.

# I. P. Co., Host to Swedish Visitors

GLENS FALLS, N.Y.—Two high-ranking representatives of paper makers' unions in Sweden were conducted on a tour of the Hudson River mill of the International Paper Co. at Palmer, N.Y., on April 7.

The Swedish officials, who are visiting this country under the auspices of the ECA are Johan V. Krumblad, secretary of the Swedish Institute of Labor, of Stockholm, and Birger Ohgvist of Skoghall, who is in charge of sulphite liquor making for the Skoghall Cellulose Corp.

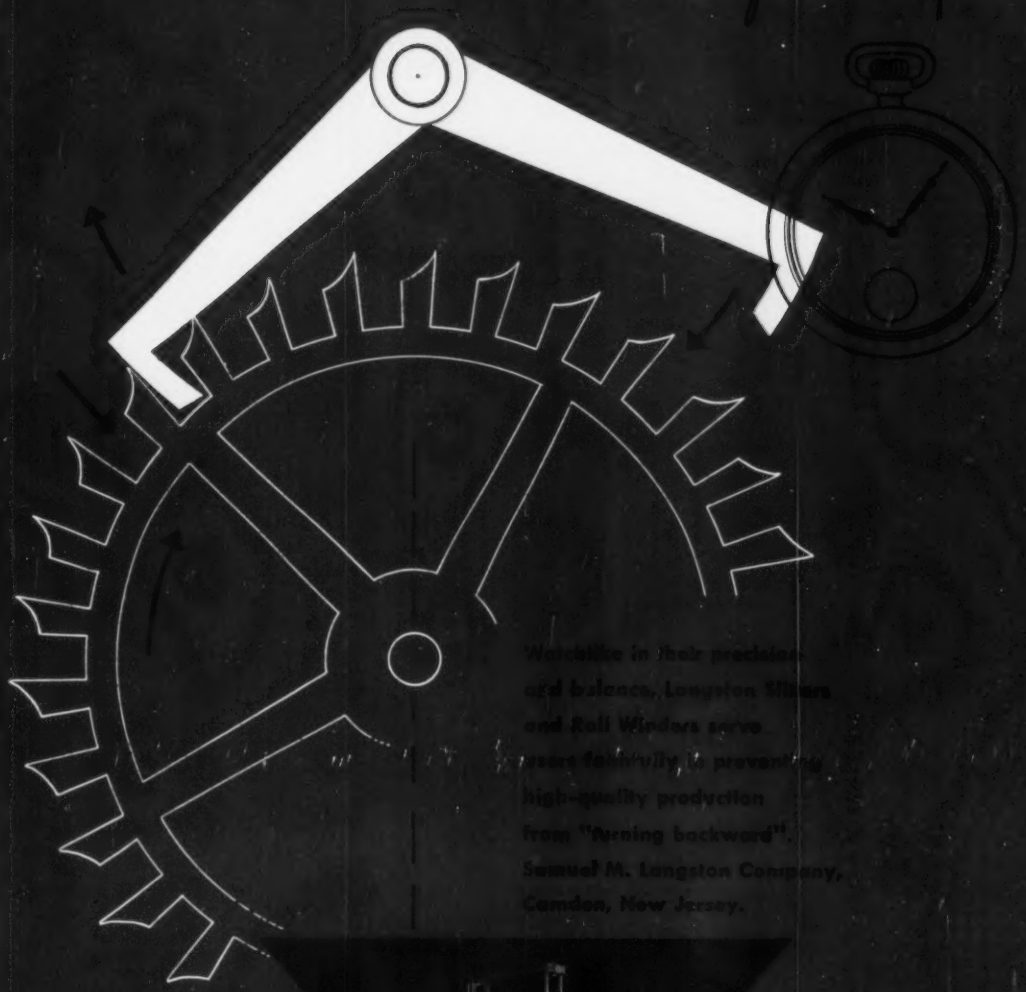
Mr. Krumblad and Mr. Ohgvist arrived at the Warren County Airport here by plane from New York and were met by Francis J. Tierney of Fort Edward, assistant to the president of the International Brotherhood of Pulp, Sulphite & Paper Mill Workers, and Frank C. Barnes, Jr., of Fort Edward, treasurer of the same organization. They motored to Corinth where they were joined by George J. Adams, industrial superintendent of the International Paper Co. to begin a tour of the Palmer mills.

John Milander, a mill engineer who was educated in Sweden prior to World War I, joined the group and acted as interpreter.

The Swedish union officials are two of a group of ten visiting in this country. They attended the national convention of paper makers in Cincinnati, Ohio, the week of March 20, and later visited industrial plants in Milwaukee, Detroit, Chicago, and Minneapolis.

The visit to the Palmer plant was arranged by Miss Anna Gould, project manager of ECA, and John P. Burke, president of the IPS & PMW Union.

**ratchet:** a hinged tongue that prevents a toothed wheel from turning backward



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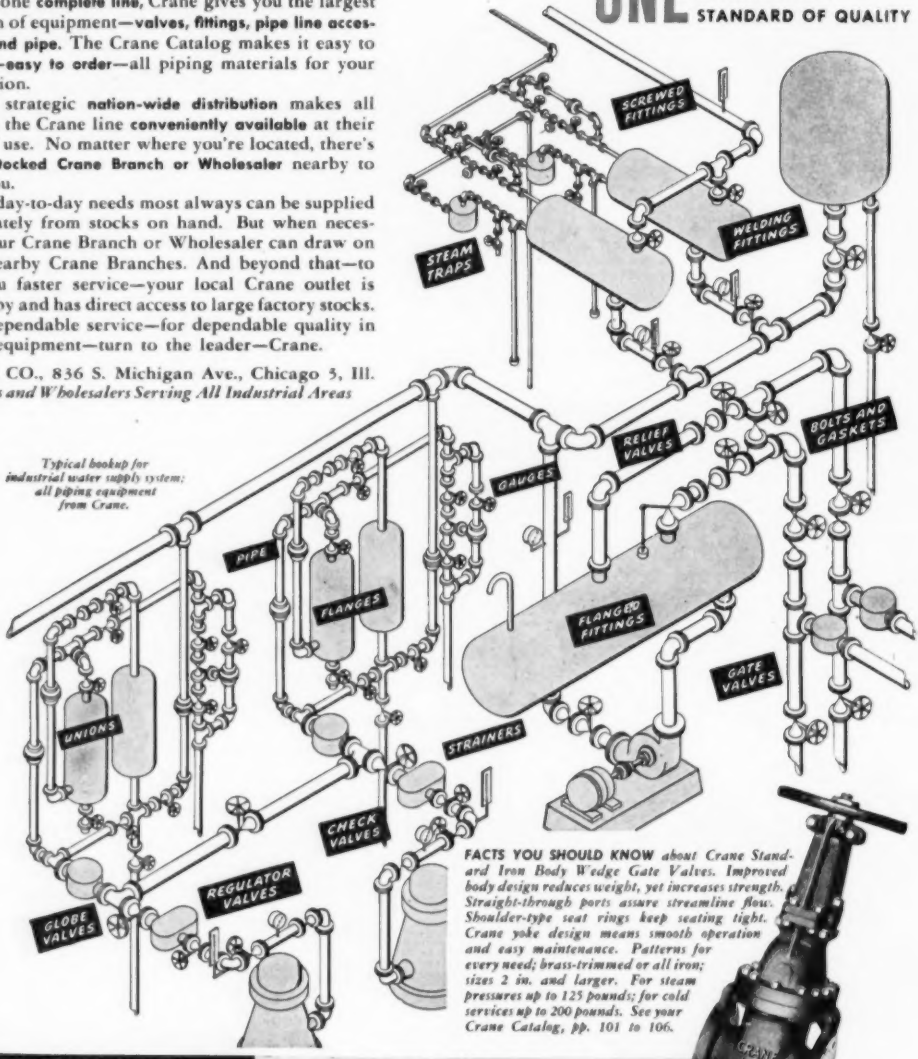


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# Domestic Vegetable Tannin Supplies

**ROBERT M. LOLLAR and FRED O'FLAHERTY**

Tanning Research Foundation, Tanner's Council of America Institute of Scientific Research, University of Cincinnati.

Vegetable tanning materials are utilized by American industries in a variety of ways, including the tanning of leather, the treatment of boiler water, in the drilling of oil wells, in the production of dyes and colors, and in many other ways in lesser volume. However, the leather industry uses about 95 percent of all vegetable tannins consumed in this country. The total tonnage of vegetable tannins used in this country is very large, it being estimated that 113,000 tons of 100 percent tannin were used annually in the pre-war period of 1937 to 1941. During the war (1942-1945) we used more than 120,000 tons of 100 percent tannin annually, and it is probable that this use still continues.

Twenty years ago this country produced domestically about 56 percent of the total tannin it consumed (7). Since that time domestic production of vegetable tannins has decreased until today we are importing about two-thirds of our vegetable tannins. Our only domestic source of tannin in appreciable tonnage today is chestnut bark, although in certain areas, as for example California, oak wood and bark furnish significant tonnage of tannin. Even the supply of chestnut is not adequate for the future. The American chestnut has been largely killed by blight, so that for years the utilization of chestnut for tannin and wood pulp has been dependent upon the harvesting of dead stands. During the recent war, the demands for wood pulp and tannins and the dislocations of importation due to shipping difficulties resulted in heavy exploitation of our remaining reserve of chestnut. It is not especially pessimistic to predict the exhaustion of these reserves within the next ten or fifteen years.

In addition to the uncertain domestic supply of tannins, we can not feel confident about our ability to import a sufficient tonnage of tanning materials. Quebracho and wattle extracts now comprise the dominant materials which are being imported by the American tanning industry. Argentine quebracho, which has been furnishing up to two-thirds of our total tonnage of tannin, is controlled by an international cartel which has established export and price controls to exploit the shortages of tanning materials to the utmost. Just recently quebracho extract has undergone a drastic price increase which has caused all American users of it to consider alternative materials.

Wattle is still a very poor third in point of tonnage used by American tanners. Quebracho and chestnut combined have long furnished almost three-fourths of our tannin, and during the war years furnished almost 85 percent of total tonnage of vegetable tannins. Wattle has been and still is only the most used of a number of minor tannins. Wattle is capable of development in many areas of the world, but Australia and South and East Africa dominate the international trade in this tannin. However, wattle's potential for the American user of tannin must be discounted because of the large tanning industry in these areas, which employs it at home, and because of Empire preference which directs it toward the United Kingdom. Further, since it also is partially under the control of one of the parties to the monopolistic cartel which distributes quebracho, we can not hope that wattle from these sources will be available to break up the economic squeeze-play of the quebracho price spiral.

The total available tonnage of vegetable tannins and its cost comprise only two of the basic three characteristics which pertain to the tannin supply picture. Tanners find it necessary to employ a blend of tannins to control the properties of their leather. Further, certain non-leathering uses of tannins require specific tannins such as the age-old dependence of the pharmaceutical industry on nut-gall tannin. During the war years, these more exotic tannins, such as mangrove bark, myrobalan nuts, valonia cups and beards, gambier extract, and sumac leaves, became largely unavailable because they came almost without exception from strife torn areas. With the cessation of global hostilities these minor tannins have again become more available. However, the post-war nationalistic industrialization of previously rural economies has resulted in increased utilization of tannins in the source countries. Thus, again, importation of tannin is not possible to the American tanner except at economic disadvantage.

It therefore seems evident that the supply picture for vegetable tanning materials in this country is sufficiently precarious to justify some organized effort to improve it. Domestically, the disappearance in the not too distant future of chestnut can not be disregarded, while the world supply picture is clouded by monopolistic controls and the development of foreign tanning industry, both of which will work to the disadvantage of the American tanners. The total supply in sight is insufficient, and the available supply is in misbalance as to type of tannin. When we recall the tight situation during the recent war, we further see that the development of a factor of safety for any period of future stress is highly advised.

There are several possible solutions to the problem. These are: research so that existing sources of tanning materials can be more effectively utilized, the development of synthetic tanning materials, the detection and utilization of existing unused sources of vegetable tannins, and the development of cultivated sources of usable materials. We shall see that progress in all of these directions is possible.

Methods for the better utilization of existing sources of vegetable tanning materials would not add to the total availability of tanning materials especially, but it would serve to make possible better adjustment of the misbalance which currently exists in the types of materials available. During the recent war, the British tanning industry, since it was so dependent upon imported sources of tannins, was even more limited than the tanners in America as to the types of tanning materials which were available. The shortage of phrogallol tannins (e.g. chestnut) was especially severe, and it became necessary to develop methods of utilizing the available supply of catechol tannins (e.g. quebracho or wattle). The British Leather Manufacturers Research Association carried out some research, which was followed through by plant study, which enabled them to utilize wattle as a substitute material for such non-available tanning materials as chestnut. In essence, the basis of this development is to be found in the concept that much of the difference in the tanning ability of different extracts is in the varied acidity and salt content. Wattle, as an extract of low acidity and salt content and also possessed of good solubility characteristics, was found to especially permit modification, in that when the proper additions were made of organic salts and acids, it could be used in the rockers of a sole leather tannery as a replacement for chestnut without the necessity for extensive changes in the customary

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practice. Balfe (1) as well as Okell (2) have reported upon the successful applications of this concept. American shortage of chestnut has not yet become sufficiently severe to result in a concerted effort in this direction here. However, as chestnut becomes scarcer and wattle becomes more available, which is possible, then the American tanners should be able to adopt this proven substitute.

The available supply of tanning materials would of course go further if any portion of the material which is now discarded as waste could be recovered. In so far as the tannins themselves are concerned, it does not seem that the wastage is sufficient to be significant even if it were all recovered. However, associated with the tannins are non-tannins which are at least in part related to the tannins, but not possessed of all of the properties which alone would make them a tanning material. It has been suggested by some tanners that some method of processing these wastes might add to the total tanning material supply. This would of course be a question which could only be answered after an adequate research study of the problem had been made. It can not at least be denied that it is a possibility, although it must also be pointed out that it would be a difficult process to justify economically in view of the dilution of these wastes and also the impurities which are present and which could not be converted.

Prior to the recent war, the German chemical industry had been actively engaged in the production of synthetic materials which could replace natural vegetable tannins. Their efforts were so successful that it was possible in some instances to use these materials exclusively and still produce good leather. Many military leathers employed 40 or 50 percent of these materials in the blends used to produce them, and it was obligatory to use a certain percentage of these materials on non-military leathers. The development of replacement synthetics by the American chemical industry did not occur as soon as the German development did. However, Turley (3) has reported upon the Rohm and Haas development of a condensed phenolic sulfonic acid type of replacement synthetic tannin, which has been shown to be usable with or in place of vegetable tannins. Because of the critical shortage of vegetable tannins, the Office of the Quartermaster General over the past several years has been sponsoring a research program directed toward the development of synthetic tanning materials. This program has been coordinated at the Tanners' Council Research Laboratory. Highberger, Bump, and O'Flaherty (4) have reported upon this research, which has produced tanning materials which have been used to produce leather in commercial operations. Other materials of a synthetic nature are also currently being developed, so that the future availability of such material is promising.

These synthetic materials, however, have one disadvantage which is difficult for them to overcome. Even with the current increase in the cost of natural tanning materials which has resulted from the current shortages, they are not nearly as expensive as the synthetic materials, particularly when these synthetic materials are compared in cost to the dominant three, quebracho, chestnut, and wattle. While the synthetic materials are being used, this use usually is not in the sole leather industry, where the cost of the tanning material is a more significant portion of the total leather cost; yet this is the largest branch of the leather industry in the utilization of vegetable tannins. When we consider that the dominant three vegetable tanning materials are currently selling at 14 to 22 cents per pound of 100 percent tannin, and when we further consider that this is the cost range of such raw materials for the synthetic tannins as phenol, cresol, formaldehyde, or furfural, then we can readily appreciate the higher cost of the synthetics. Since pound for pound it is not possible to convert the raw materials into tannin, and since the production cost must be covered, it is readily apparent that the costs of the synthetics may remain high. It may of course be true that operating economies will lower the cost of the synthetics, and that scarcity of natural tanning materials will force further rises in the cost of these materials, so that the two types of materials are eventually competitive in cost. This will, however, have resulted in an increased cost of leather production in comparison to the present day balance.

There are, however, certain alleviating circumstances about this probable greater cost of the synthetic materials. Presently, the available synthetics do not produce equivalent leathers more economically, nor do they produce demonstrably superior leathers, than is possible with the natural tannins. However, as we learn more about these materials, we will learn how to make this true, and particularly the ability to produce superior leathers will be worth some additional cost. Further, these materials will have a uniformity in the properties which is not possible with natural materials. There is also the possibility of using these synthetics in conjunction with low grade tanning materials, such as the sulfite cellulose process waste liquors, to produce a cheaper product. This would aid in disposing of a present source of troublesome stream pollution, and would provide an abundant supply. Some progress has been made in this direction and, as we learn more about the synthetic tanning materials and the lignosulfonates, we will be able to develop more effective blends. It might be remarked that lignosulfonates, which are components of the sulfite cellulose process waste liquors, were a component part of several of successful German synthetic tanning materials.

There has also been a significant effort to develop our sources of domestic tanning materials which currently have not been utilized. With the spread of industry in this country, and especially with the industrial development in the South, attention has been turned to available sources of naturally growing tannin-bearing species there. Russell (5) has carried out an extensive survey of the tannin-bearing species of the Southeastern United States Buttonwood is one source which he has especially emphasized, which has shown to have good tanning properties, including the ability to be used effectively to make sole leather. Darling plum represents another possibility. Russell's survey did not, however, include any information on the availability of these materials. Unfortunately they, like mangrove, are species of the tropical and subtropical areas, especially in Florida, and as such are not too readily available. It is true that tropical areas abroad have been successfully exploited for their tannin-bearing species, but the labor situation there is different from what it is in this country.

California tanbark is another source which may receive greater utilization in the future, and the California Drug and Oil Plant Division should receive the fullest support in its attempts to develop it. The Division has found that there are almost three million acres of native California tanbark oak, with an average tree count of twenty trees per acre. They have indicated that it should be possible to harvest this species to secure a tannin source as well as source of paper pulp. However, it may be that the trees are too scattered to permit its economic utilization. At least many who are familiar with industry feel that this is true. It is to be hoped that a thorough survey will soon establish the potential of this source.

Scrub oak is a material not currently utilized to the fullest possible extent. Calderwood and May (6) have reported upon a study of the species in Florida, which lays the foundation for an actual test of the potentialities of these species as a source of tanning material. Since oak is a known tannin of appreciable value, development of sources of oak extract would be very welcome to the tanners. The Floridian scrub oak is more accessible than the tropical species, and there seems to be scrub oak available elsewhere in the South. It would seem very desirable to carry the investigation of scrub oak to its logical conclusion and produce a sufficient tonnage of the material to make it possible to make a tannery evaluation.

Hemlock bark represents a known

source of vegetable tanning material which has been very inadequately exploited in this country. Hemlock bark tannin comprises only a small portion of the total tannin tonnage, yet there is extensive utilization of hemlock by other industries, with the bark being largely wasted. In the Great Lakes area, hemlock bark is discarded in sufficient quantity so that preliminary surveys indicate the justification of the establishment of extract plants. Years ago large quantities of Eastern hemlock were utilized by American tanners, and it was used along with oak as the sole tanning materials employed in many tanneries. There seems to be no adequate reason for its decrease in utilization, although the shortage of bark is often given as a reason. In view of the present shortage of tannins and the known wastage of this bark, it is to be hoped that efforts to utilize it will be catalyzed.

Western hemlock bark is also a waste of tremendous quantity. Its utilization up to this time has been handicapped by the remoteness of the source of the bark from the location of the major centers of vegetable tanning industry in the Eastern section of the United States, and by lumbering practice in its major areas. The logs are floated for appreciable periods in salt water, which lowers the tannin content of the bark, as well as contaminates it with salt. However, the potential tannin from this source is so great that it is tragic to lose it. Since it involves such extentive problems, and since so much of hemlock stand is on government land, it is almost inevitably a project which must receive governmental support. Smoot and Frey (7) have reported efforts in this direction, and it was considered as a war-time possibility. It seems logical to prosecute the issue to its final conclusion now, when the imminence of a need for more tannin would encourage such a long-term project.

It should be emphasized that oak and hemlock tannins are very desirable materials which would aid in balancing our current supply of tannins. All possible efforts should be expended to utilize all waste barks of these two species. They are proven tannins which the tanner can use to advantage, so that if they are made available at an economically competitive price they will find a market.

Clark, Mann, and Rogers (8) have shown that three different species of American sumac can, if correctly processed, furnish a ground leaf with considerable promise as a tanning material. The best species, Rhus copallina, or dwarf sumac, produced a product which was evaluated in the tannery as being almost equal to Sicilian sumac, although the leather color was a little dark. Since sumac is one of these tannins which are valued for the special leathering properties they possess, this domestic source is especially interesting. It must, however, be reiterated that the emphasis be placed upon careful processing. The knowledge that domestic sumac possessed tanning potentialities has long been known, but careless harvesting has usually ruined it. Here again, American economics and perhaps climatic conditions have hindered the development of the domestic source. Russell, in the reference quoted earlier, has also shown that careful processing of domestic sumac can yield a desirable product.

Another source of tanning materials in appreciable tonnage would be wastage from the redwood industry. The Institute of Paper Chemistry has carried out an extensive research study of redwood tannins. They have emphasized their value as inhibitors of the oxidation of mineral oil, as has been reported by Lewis, Buchanan, Fronmuller, and Kurth (9). It has also been shown to make leather, although its complete evaluation is still not available. Study of the tannery utilization of redwood tannin has progressed to the point that one of the larger extract manufacturers has extracted several tons of the waste and prepared sufficient extract for a tannery evaluation. While these results indicate that there are still problems to be solved in handling this material, due to age instability, they also indicate its potential promise. While its West Coast location may handicap its nation-wide use, it will certainly be available in an appreciable tonnage if it is proven to be especially desirable.

So far we have been discussing the utilization of naturally available sources. It would, of course, also be possible to cultivate tannin-bearing plants, if species with sufficiently short cropping periods could be found. In the sense that cultivation might also be considered to include reforestation, any of the tannin-bearing species might be cultivated. Thus, it has been suggested that Chinese chestnut would be a blight resistant replacement for the native chestnut, and plantings have been made to study this possibility. It does not seem likely that this possibility will develop. Further, under the present conditions of American economy, projects whose maturity is delayed over a period of many years are not likely to be favorably received. However, in terms of shorter maturity plantings, or even annual harvest, there may be some possibilities for future development.

During the war there was at least one successful utilization of a waste from cultivated species. The pecan shells left after the removal of the nuts contain tannin, especially in the form of the powder to be found around the septa. This powdery material was successfully utilized during the war as a component of a blended extract.

We discussed earlier the utilization of naturally occurring sources of domestic sumac. Sievers and Clarke (10) have reported upon some preliminary studies of sumac as a cultivated, cropped sources of leaves. Sumac is a valuable erosion-controlling plant on marginal lands, and it has a wide range of growth in this country. It will be recalled that it was necessary to use extreme care to produce a good leaf for tannery use, and that even the best domestic source was not quite as good as the Sicilian leaf. By proper selection of the species, the climate as controlled by the section of the country, and the soil as controlled by the site of the planting and the added fertilizer, it should be possible to modify the characteristics of domestic sumac so that it would be convertible into a dried leaf as good as Sicilian sumac. Machinery is being developed to permit efficient harvesting of a portion of the leaves on a given tree, thus resulting in the possibility of the economic harvesting of an annual crop. Intelligent organized support of these developments could make us independent of foreign sources for this specialty tannin. The cost requirements are not quite so stringent here, since it is one of the more expensive natural tannins, so that it is not too optimistic to hope for success in this regard.

Canaigre is a dock-like plant growing in the arid Southwestern United States whose root is a source of tannin. It presently is a wild plant, but its cultivation and harvesting over a period of perhaps one or two years is seemingly feasible. The development of this material has been carried on for several years by the Eastern Regional Research Laboratory. The preparation of a suitable extract has in the past been handicapped by the presence of a high content of carbohydrate material, including soluble sugars and also starch. Thus extraction with water over the gelation temperature of the starch is almost impossible, and even a cold water extract is of very low purity. Thus, even though canaigre has been known for fifty years and was used at the start of the present century to make commercial leather, it has never been utilized commercially in recent years. The work of the Eastern Regional Laboratory now offers promise that the difficulties with this material may be overcome. Cordon, Beebe, and Rogers (11) have been able to select organisms to ferment the undesirable carbohydrates and thus to raise the purity, and they have been able to develop centrifugal extraction procedures of increased efficiency. Planting experiments are in progress. Here again, a catalyst is needed to bring this development to an early fruition; primarily this catalyst is the financial support to enable a more adequate planting and extraction program.

California is currently engaging in some developmental work designed to

improve the natural resources of the State, especially with respect to natural oil, tannins, gums, and pulpwood. Kegley (12) has reported enthusiastically upon the possibilities of wattle as a planted species in this program. It is contemplated that extensive planting will be made over large areas of marginal land along the seacoast. Time only will tell whether the early promise of this development will mature. It has the advantage that it is an integrated program, which augurs well for its eventual success. It of course will result in the development of a tanning source on the West Coast far removed from the Eastern concentration of the vegetable tanners, yet it should be just as feasible to ship the tanning material by water from California to the Eastern ports as it is to ship it from South Africa This development will be watched with hope by the users of vegetable tanning materials. The five to ten years required for maturity on the plantings is a little long, but it is at least within the period when chestnut will no longer be securable, if a prompt start upon appreciable plantings can be made. California's effort is designed to meet this goal, and to reach the goal in sufficient time to be ahead of the development in Brazil. This rivalry is a healthy sign.

With respect to the use of planted or cultivated sources of tannins, it might be mentioned that so far all of these developments have employed those species or strains which by natural selection have been found to be best adapted to the purpose. However, we know of the vast improvements which have been possible in such crops as wheat or corn, by the proper use of genetics. Dr. Ernst J. Schreiner, chief geneticist of the Forest Service, has pioneered some developments in forestry which may yet be turned to the problem of securing more tanning materials. This is a slow tedious task, but already Dr. Schreiner has been able to develop hybrids of poplars which reach 70 foot heights and a suitable size for lumbering in five years. He hopes to start breeding for desired grain effects, and for wood properties desired by the paper industry. It would not be wise, therefore, to discount the possibilities of developing better sources of vegetable tanning materials if sufficient support were available for the work.

In summary, we may note that there is a current acute shortage of vegetable tanning materials and that this shortage will become critical if chestnut should be entirely lost without replacement. It is noted that the synthesis of materials which have similar tanning properties by the American chemical industry is one possible solution to the problem which is being followed, and which offers considerable promise for the future. However, the utilization of untapped sources of vegetable tanning materials such as waste bark or cultivation of tanning-bearing species is another alternative solution which is also promising. The final course of future development will depend upon which alternative can most economically supply the needed tonnage of tanning materials with the necessary varied characteristics. We have tried to indicate which are the most promising directions in which future research efforts and support should be expended.

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# Flash-Drying Bark for Better Burning


**J. H. FREIDAY**

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In paper mills and other plants processing raw wood, increasing fuel costs have changed what was once primarily a bark disposal matter into an important fact in reducing steam costs. This has lead to the development of improved methods of drying and burning of bark.

Bark as fuel may be divided into two classes: Southern barks which average under 50 percent moisture on a wet weight basis and Northern barks which will range between 60 and 80 percent moisture. This is due to river driving and wet barking in the North versus rail or truck transportation and dry barking in the South.

A properly designed spreader stoker using a traveling grate and preheated air appears to be the answer to improved combustion, increased efficiency and ash disposal in bark burning. However, there is a limit to the moisture content in the bark which can be handled and burned successfully using a spreader stoker.

The problem with which we are now concerned is the preparation of wet Northern bark for improved burning and heat recovery. Present solutions involve:

1. Pressing to reduce the moisture to between 60 and 65 percent.
2. Hogging to improve handling and burning.
3. Drying to remove additional moisture.

The minimum practical moisture content of pressed bark appears to run between 60 and 65 percent. Further reduction is possible but has not proved practical to date without excessive maintenance and power consumption.

The hogging of bark has become increasingly common practice in both Northern and Southern mills. Its chief contribution has been to improve the handling, storage and transport of this material, but it also improves the combustion rate since its exposes additional surface to the burning process.

Drying of bark for fuel has been attempted for several years, but without much success from an economic standpoint. The majority of past attempts have been based on the use of the relatively low temperature flue gas and a long drying period. This has resulted in a relatively small amount of drying accomplished, difficulty from fires in the dryer and high maintenance requirements.

The Flash Dryer which was developed by the Combustion Engineering Company to cover many aspects in the field of dried materials is now being applied to the future preparation of bark for burning. Flash drying may be defined as the practically instantaneous removal of moisture by turbulant mixing of hot gases and wet particles.

The Flash Dryer System consists of a mixing mill and a separator from which the dried material is withdrawn and the drying gases and vapor vented, plus the necessary connecting ducts and controls. The dryer is actuated

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with approximately 50 percent by weight of the hot furnace gases. These are discharged from the drying system at approximately 400° F. Bark fuel with an initial moisture content of 63 percent will be reduced to approximately 45 percent moisture.

The relatively low vent temperature of 400° F from the Flash Drying System compared to normally higher stack temperatures encountered from a bark burning boiler unit will mean an initial increase in overall thermal efficiency, since this applies to approximately half of the total weight of the products of combustion. Further improvement in efficiency can be expected from the ability to burn the dried fuel with much lower excess air and much better control. The higher furnace temperatures resulting will also improve the heat absorbing rate of the boiler surfaces.

The greatest effect of the inclusion of a Flash Dryer in a high moisture bark burning system is a considerable reduction in the size of the conventional heat recovery equipment, including the boiler, the economizer if used, the air heater, the induced draft fan and the stack. This is effected by the removal of half of the gases from the furnace and accomplishing the drying without burdening the other recovery equipment with them; all with no loss in thermal efficiency but possible gain. An initial reduction in the total weight of the products of combustion is obtained through the ability to burn fuel with less excess air. Furthermore, vapor from the moisture removed in the Flash Dryer does not even enter the furnace. Additional material savings can be obtained through the ability to use a spreader stoker, which will eliminate the necessity of a protruding Dutch Oven and special grates. The spreader stoker is also adapted to handle coal as an alternate fuel.

Based on the results of a pilot plant operation in the field, a full size Flash Dryer System is now being installed at the Great Lakes Paper Company in Fort William, Ontario, Canada. This system is designed to handle 150 tons of bone dry bark per day at an initial moisture of 63 percent. It is expected to more than double the present bark burning rate in the existing Dutch Ovens and also increase the steam produced in the existing boiler by an even greater ratio, due to improved efficiency. Operating data on this unit should be available early in 1949.

# Hammermill Pulp Warehouse A Model of Efficiency

**Designed Around Use of Cleveland Tramrail Screw Grab**

The large pulp storage warehouse of the Hammermill Paper Co., Erie, Pa., completed in 1948 is an outstanding example of efficiency secured through careful advance planning. Having decided that a Cleveland Tramrail Crane and Screw Grab would best serve their needs, they designed a building to properly accommodate a crane and of sufficient height to enable taking advantage of the high piling possible with the equipment.

As a result, Hammermill has a warehouse which will store more pulp for the cost of building than otherwise would be possible. Further, it can handle the pulp in and out of storage at a figure below that possible with any other method.

The warehouse, which has a capacity of 5000 tons, is used primarily for storage of Canadian and Swedish pulp that goes into the fine bond papers for which Hammermill is nationally famous. The pulp comes in bales which are piled up to 35 feet high or stacks of 23 or 24 bales.

Fig. 1 The ease, speed and accuracy with which the crane operator spots the grab on bales far below is amazing. The distance from tramrail runway track to floor is 45 feet. Complete utilization of all space in the warehouse is obtained.

Fig. 2 The crane operates on three runways at a speed of 450 F.P.M. and has capacity of 1500 lbs. material plus grab. Note that the entire floor area is utilized for storage. No aisles are needed and bales are piled high.

The screw grab has three floating heads, each with three motor-driven screws or augers that screw into the pulp and hold it secure when in transit. Three bales can be handled at a time. Because of the floating heads, bales can be picked up even when stacked unevenly and with tops as much as six inches below one another. A light on each head, visible to the crane operator, indicates when the bales are firmly in position.

The handling of all pulp into and out of the warehouse is done by two men, one on the floor and the other in the crane cab. Two hundred tons can easily be handled in and out of the warehouse in an eight-hour day. The bales weigh from 400 to 425 pounds each.

Another feature of the warehouse is the improvement in safety. Because all bales are handled by crane, there is no need of hand-handling and no possibility of usual back strains. Likewise, there is no need of men walking on top of piles and consequent dangers are removed.

Important features of this installation include:

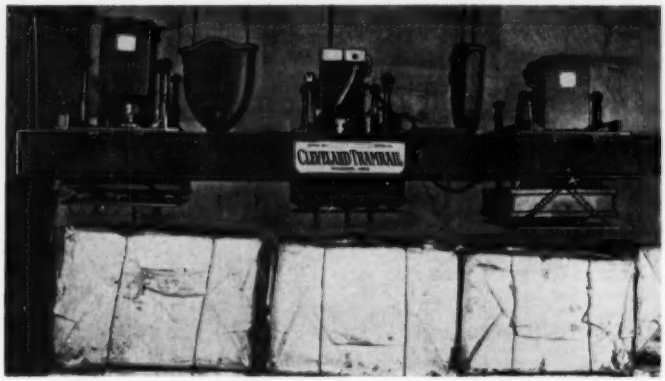



Fig. 3 Because of the floating screw heads, the screws make contact with the bales even though not piled evenly, and screw in to hold them firmly. One bale can be up to 6 inches higher than an adjacent one.

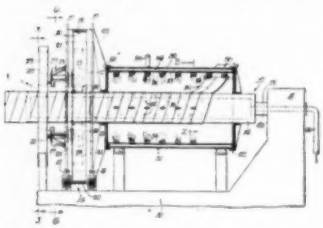
(1) More pounds stored per square foot, because no aisleways are required and because of high piling; (2) Bales piled to 35 feet high; ie., 23 to 24 bales high; (3) Cost of building for amount stored lowest possible; (4) Man-hours spent handling bales greatly reduced; (5) Handling cost lower than for any other method; and (6) Safety improved.

# Patent Abstracts

● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information to our readers are included herein.***

*2,453,537 — Tube-forming machine.* Edward R. Phillips, Evanston, Ill., assignor to Morton Salt Co., Chicago, Ill.

In a paper-tube-forming machine, a rotable mandrel upon which strips of paper are wound to form the tube, means for rotating said mandrel and for continuously stripping from said mandrel off of a free and thereof the formed tube, a plurality of rows of nozzles extending longitudinally of said mandrel in spaced relation thereto and directed radially inwardly against said mandrel, and means for supplying fluid under pressure to said nozzles.

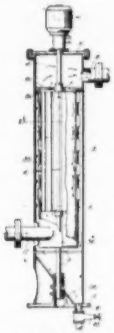


*2,453,559—Polylactylic acid resins and process for making them.* Paul D. Watson, Arlington, Va., assignor to the United States of America as represented by the Secretary of Agriculture.

A process for preparing a resinous material which comprises heating at polymerizing temperatures a mixture of between 35 and 70% polylactylic acids, between 20 and 50% fatty drying oils, and about 5% of a member selected from the group consisting of fumaric acid, maleic anhydride, and mixtures of fumaric acid and maleic anhydride until partial polymerization is effected, then adding between 10 and 15% of an oil-soluble hydrogenated coumarone-indene resin having a melting point of from 145° to 155° c., said percentages being based on the total weight of the ingredients, and continuing the heating under conditions permitting the removal of volatile products of reaction until a viscous, elastic, resinous product is formed.

*2,453,593—Apparatus for separating entrained solids from gases.* David H. Putney, Kansas City, Mo., assignor to Stratford Development Corp., Kansas City, Mo.

An apparatus for separating entrained solids from gaseous materials comprising concentric vessels of different diameters, the annular space therebetween closed at the top and open at the bottom, an inlet opening into the outer vessel, an outlet opening in the upper portion of the inner vessel having communication with an outlet in the upper portion of the outer vessel, a solids discharge opening in the bottom of the outer vessel, said inner vessel having an opening in the bottom and thereby being in communication with the outer vessel, rotative elements within the inner vessel adapted to rotate the gaseous mass passing through it and peripheral apertures in the shell of the inner vessel for the passage of solids and gases.



**2,453,593**

*2,453,644—Hot melt coating composition containing polyethylene, terpene resin, chlorinated diphenyl resin, and paraffin.* Walter C. Steinkraus, Chicago, Ill.

A composition for coating webs by hot-melt technique which comprises the following four ingredients in substantially the following percentages, to-wit: polyethylene thermoplastic 20%, hydrocarbon thermoplastic terpene resin 12%, chlorinated diphenyl resin 28%, paraffin 40%.

*2,453,679—Method of forming compressed wood structures.* Alfred J. Stamm, Raymond M. Seborg, and Merrill A. Millett, Madison, Wis.

The method of forming a compressed wood structure comprising subjecting a wood structure having a moisture content from 6 percent to 15 percent, based on the oven-dry weight of the wood, to pressure at an initial temperature from 210° F. to 240° F. until the wood is substantially completely compressed to a specific gravity from

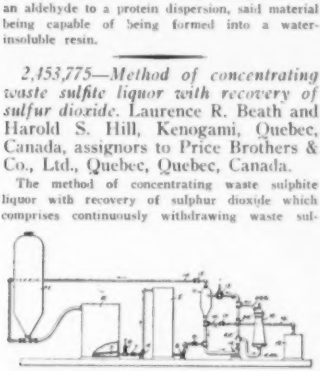
1.3 to 1.4, thereby tending to seal the moisture in the wood in the subsequent heating step, followed by raising the temperature to from 330° F. to 360° F., while maintaining the pressure, and maintaining the temperature so raised for a minimum from 3 to 50 minutes, the higher moisture content requiring the lower temperature and lesser minimum time, the interval of time used being sufficient to cause the lignin-cementing material in the wood to flow, thereby to stabilize the structure against recovery from its compression when wetted.

*2,453,752 — Emulsion adapted for coating textiles.* Fred G. LaPiana, Forest Hills, N.Y., and Herman S. Bosland, Paterson, N. J., assignors to Stein, Hall & Company, Inc., New York, N. Y.

A composition adapted to be used in textile coloring comprising a pigment dispersed in an emulsion in which the inner phase comprises a dispersion of a vulcanized vegetable oil in a water-immiscible organic liquid, and the outer phase comprises an aqueous dispersion of material comprising the product obtained by adding urea and an aldehyde to a protein dispersion, said material being capable of being formed into a water-insoluble resin.

*2,453,775—Method of concentrating waste sulfite liquor with recovery of sulfur dioxide.* Laurence R. Beath and Harold S. Hill, Kenogami, Quebec, Canada, assignors to Price Brothers & Co., Ltd., Quebec, Quebec, Canada.

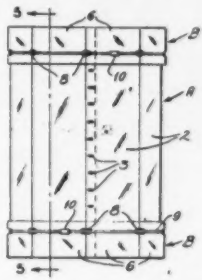
The method of concentrating waste sulphite liquor with recovery of sulphur dioxide which comprises continuously withdrawing waste sul-



phite liquor from a reservoir containing waste sulphite liquor maintained at substantially the desired maximum concentration and continuously forcing the withdrawn waste sulphite liquor to flow to spaced electrodes between which is maintained a difference in electrical potential whereby an electric current is caused to pass through the waste sulphite liquor flowing between and in contact with said electrodes thereby generating in the waste sulphite liquor the heat required for evaporative concentration, said heat being generated at a rate of less than 200 British thermal units per pound of liquor flowing between said electrodes, continuing the flow of the heated waste sulphite liquor from said electrodes and continuously separating from it the water vapor and gaseous sulphur dioxide formed by the electrically generated heat, then completing the circulation cycle by continuously returning the waste sulphite liquor remaining after the separation of water vapor and gaseous sulphur dioxide to the waste sulphite liquor contained in said reservoir, continuously bleeding off concentrated waste sulphite liquor from the circulation cycle and continuously adding dilute waste sulphite liquor to the circulation cycle and continuously withdrawing the separated water vapor and gaseous sulphur dioxide all in a manner effective to maintain the concentration of the waste sulphite liquor contained in said reservoir at substantially the desired maximum concentration.

*2,453,829—Shipping carton.* Smith A. Blackman, Kirkwood, Mo., assignor to Gaylord Container Corp., St. Louis, Mo.

A shipping carton comprising a tubular body of uniform inside width from end to end having flaps at one end thereof bent to lie alongside the



outer side face thereof, a main end closure seated against said end of said body and having marginal flaps that are bent to overlie said body flaps and are thence rebent to lie therebeneath and removably interlock therewith, a removable auxiliary end closure snugly fitting entirely within said end of said tubular body adjacent to said body and end closure flaps in spaced relation to said main end closure to provide a chamber between said end closures, said auxiliary end closure having marginal flaps that lie against the inner side face of said tubular body and terminate substantially flush with said end thereof in endwise abutting relation to said main end closure, and a band tightly encircling said body and end closure flaps at substantially the level of said auxiliary and closure for locking said main and auxiliary and end closures to said tubular body member in a substantially immovable, reinforcing and dust-proof manner.

*2,453,836—Machine for forming containers from flexible material.* Paul C. Elliott, Dayton, Ohio, assignor to Luther K. Funkhouser, Dayton, Ohio.

In a machine for forming tubular structures from flexible material, a mandrel, means for rotating said mandrel, said mandrel having means for grippping a strip of material and causing the same to be wound about said mandrel to form a tube, a plurality of receptacles mounted adjacent one end of said mandrel and movable successively into alinement with said mandrel, means for moving a tube from said mandrel into that receptacle which is alined therewith, means for intermittently actuating said receptacles, and means for applying a closure to the outer end of said tube after its receptacle has been moved out of line with said mandrel, said closed tube remaining in said receptacle until the latter is again moved into alinement with said mandrel, whereby a succeeding tube moved from said mandrel into said receptacle will eject the closed tube therefrom.

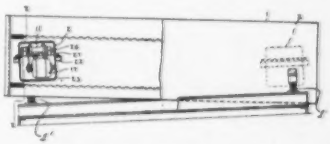
In a machine for forming tubular structures from flexible material, a mandrel, means for rotating said mandrel, means for feeding a strip of flexible material to said mandrel, said mandrel having means to grip the end of said strip and cause the latter to be wound about said mandrel to form a tube, a receptacle adjacent to said mandrel adapted to receive the wound tube from said mandrel, means for applying a closure to one end of the tube in said receptacle while a succeeding tube is being wound on said mandrel, a container for a bath of molten wax, means for moving the closed tube from said receptacle into said container and for moving a succeeding tube from said mandrel into said receptacle, a conveyor for moving said closed tube in the direction of its length through said bath and then upwardly out of said bath with its closed end uppermost to drain the tube, a second conveyor to receive the tube from the first mentioned conveyor and support the same in an upright position with its open end uppermost, means for spraying a cooling medium on said tube as it is advanced by said second conveyor, and operable means for closing the open end of said tube during the spraying operation.

*2,453,880—Container.* Byron M. Vanderbilt, Westfield, N.J., and Paul T. Parker, Baton Rouge, La., assignors to Standard Oil Development Co., a corporation of Delaware.

A shipping and storage container comprising a base material and a coating on said base material, for non-adherent contact with the contents of the container, said coating comprising a dry residue of an aqueous dispersion of 24 parts of a water-soluble metal soap, 12 parts of a water insoluble wax, 30 parts of zinc stearate, and 3 parts of a copolymer of the composition consisting of butadiene and acrylonitrile, the latter being present in amounts between 25 and 75%, said soap constituting at least 25% of the solids in said coating.

*2,453,883—Vibratory screen.* John L. Wettlaufer, Toronto, Ontario, Canada.

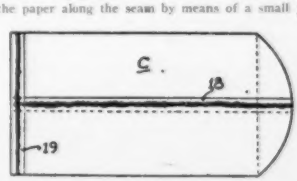
A vibratory screen, comprising a resiliently supported screen inclined longitudinally, a pair of rigid frame bars extending transversely of the screen and rigidly connected to the frame of the screen, journal bearings mounted centrally of the length of said bars, an individual spool-shaped vibratory member extending transversely between said rigid frame bars and having eccentric shaft extensions journalled in said journal bearings, and a motor resiliently suspended from said frame



bars and operatively connected to drive said vibratory member, said vibratory member having its axis extending longitudinally of the screen to impart its vibrations directly to said frame bars through said journal bearings and substantially in a direction longitudinally of said frame bars and transversely of the screen to direct the material being screened from side to side of the screen in its travel down the inclined screen surface.

*2,453,889—Method for heat sealing the seams of paper bags.* Albert M. Bojanower, Downey, Calif., assignor to Western Waxed Paper Co., Oakland, Cal.

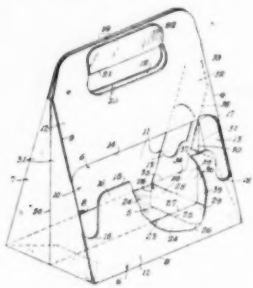
The improved method of heat-sealing a seam in a paper bag formed by two overlapping plies of waxed paper, which method includes heating the paper along the seam by means of a small jet



of steam injected downwardly against the upper face of the upper overlapping ply, restricting the heating of the paper to the direct contact of the steam jet with the paper and keeping the paper from actual contact with any heated solid object in order to avoid excessive heating of the paper and spreading or "killing" of the wax at the seam, whereby the heat from the steam jet passing through the upper overlapping ply will soften the wax between the plies, and finally pressing the overlapping plies together with unheated pressing means while the seam is cooling.

*2,453,908 — Bottle carrier.* John Harhay, Los Angeles, Calif., assignor to Los Angeles Paper Box Factory, Los Angeles, Calif.

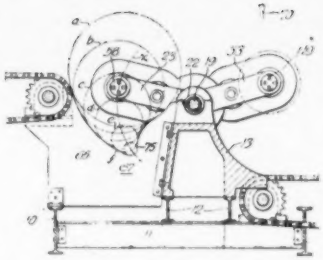
An article-carrying carton comprising sides that slope continuously toward each other from the bottom to the top of the carton, each side



having a transverse opening to receive articles, each side along the end edges thereof having integral end portions and the end portions on each end of the carton cooperating to form triangular end walls, a central longitudinal score line in each end wall whereby the same is adapted to fold inwardly along the mentioned end edges of the sides, an outwardly foldable bottom integrally connecting the sides and formed at each end with an extension residing within and affixed to each respective end wall, said bottom having a longitudinal score line on which the same folds, a transverse slit adjacent each end at which the ends of the latter score line terminate, and an angularly directed score line extending from each end of each transverse slit to each respective adjacent corner of the bottom, said slits and angularly directed score lines defining trapezoidal portions that form parts of the bottom when the carton is opened to carry articles and fold inward with the end walls.

*2,453,947—Hydraulic type log debarker having plural log-rotating chucks independently revolvable about a common axis.* Frank H. Swift, Portland, Oreg., assignor to Crown Zellerbach Corp., San Francisco, Calif.

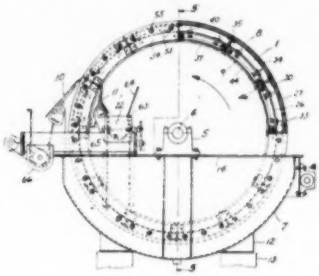
In a hydraulic barker, a pair of arms mounted for rotation about a fixed axis, means for rotating said arms in unison, said arms extending in the same plane, a chuck mounted in each arm for rotation on an axis parallel to said fixed axis, said chucks located equal distances from said fixed axis, means for rotating one of said chucks, a debarking nozzle, and a stationary support for positioning a log in said machine to facilitate engagement of the ends of the log by said chucks preparatory to the moving of the log into debarking position with respect to said nozzle, said support having curved, downwardly sloping sides, the curvature of said sides being determined by points of tangency of circles of decreas-



ing diameter having their centers arranged in the circular path described by said chucks when said arms are rotated, whereby logs of different diameters will be properly positioned by said support for engagement by said chucks and arms.

*2,454,134—Rotary drum filter.* Ambrose L. Burleson, Berkeley, Calif.

In a rotary drum filter of the character described having a cylindrical wall, a plurality of arched screen segments formed and adapted to



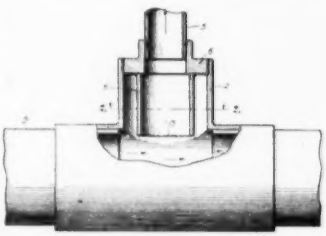
collectively substantially cover said cylindrical wall, means adapted for securing a separate sheet of cloth over one side of each of the screen segments, and means for holding said cloth in contact over the surface of said screen segment and providing a series of spaced strips extending across said screen segment outward of said cloth forming tracks for a sludge scraping blade to bear against, and means for detachably securing said screen segments to said wall.

*2,454,258—Water treatment to prevent embrittlement cracking.* Wilburn C. Schroeder, Calvert Hills, and Abraham A. Berk, Berwyn Heights, Md., assignors to the United States of America as represented by the Secretary of the Interior.

A method of conditioning the water in a boiler to render it alkaline but incapable of yielding strong concentrations of caustic soda on evaporation, in which the alkalinity is imparted to the water exclusively by hydrolytic dissociation of alkali-metal salts and especially one of said salts selected from the group consisting of secondary and tertiary phosphates, silicates, borates, acetates and fluorides, and in which the alkalinity of the boiler water is controlled by determining the concentrations of all the alkali-metal salts of said group contained in the boiler water exclusive of the selected salt and determining the concentration of the selected salt which in conjunction therewith would impart to pure water a selected pH value desirable for boiler operation and lying between 8.5 and 12, adding to the boiler water the so determined concentration of the selected salt, testing the pH of the boiler water from time to time, and adding thereto such quantities of the selected salt and of acid and basic agents as are indicated by the tests to be necessary concurrently to maintain the so determined concentration of the selected salt and an alkalinity of the boiler water between the selected pH value and 8.5.

*2,454,259 — Self-cleaning screen structure.* Rolland O. Shadday, Joplin, Mo., assignor to Herbert Wolcott, Columbia, Mo.

A self-cleaning screen assembly comprising, in combination with a main conduit for conducting a liquid flow and having a branch pipe portion tapped for a branch pipe connection, an



adapter fitting having a body portion threaded into said branch pipe portion and formed with an exterior nipple for connection with a branch pipe and also an interior pipe section of relatively larger inside diameter than the inside diameter of said exterior nipple and projecting in alinement therewith, whereby the inner end of said pipe section is positioned by turning of said body portion of the fitting in substantially flush relation with the interior wall of the main conduit, and a screen element carried by the inner end of said pipe section in substantially parallel relation to the direction of the main liquid flow through said main conduit.

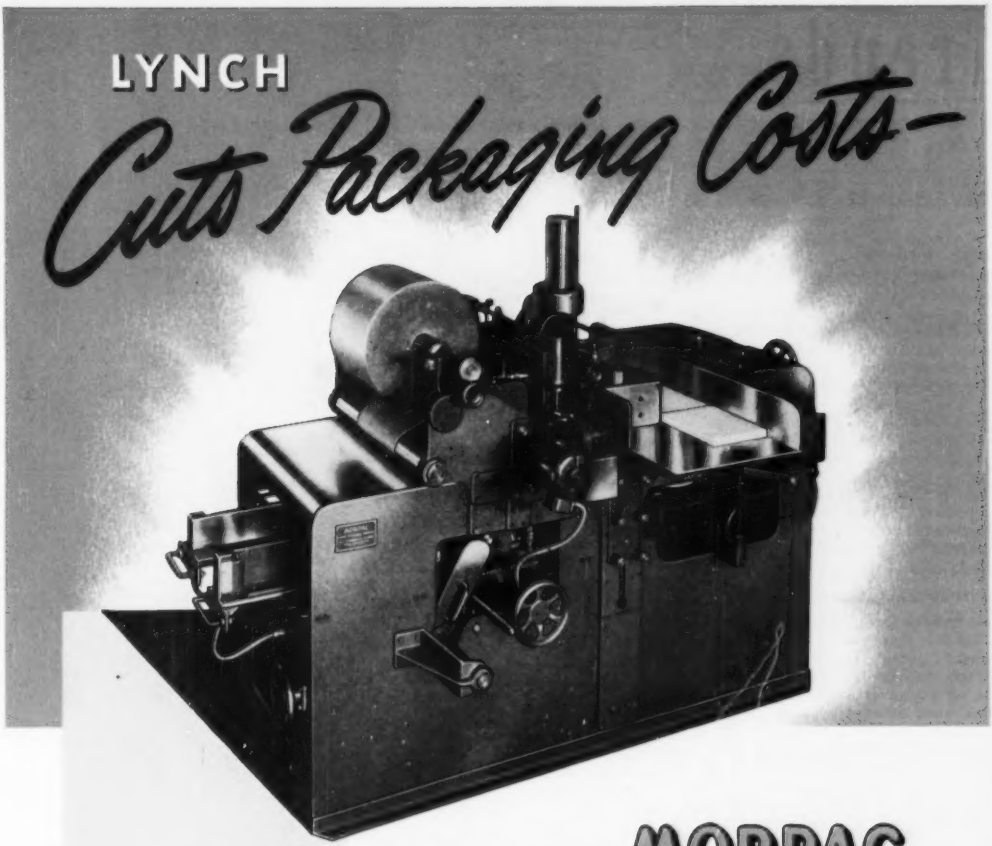
*2,454,532—Process for defibering lignocellulose while subjected to steam and a digestive chemical.* Henry E. Walter, Cloquet, Minn., assignor to Wood Conversion Co., Cloquet, Minn.

The method of treating lignocellulose which comprises heating lignocellulose in the absence of suspending liquid and in an atmosphere of steam at an elevated temperature above 212° F. at which the lignocellulose is rendered plastic, and simultaneously defibering the plastic lignocellulose and incorporating substantially uniformly throughout the lignocellulose chemical reagent reactive therewith, whereby to produce chemically treated fibers without substantial loss of constituents of the original lignocellulose.

*2,453,213—Process of treating lignin residues.* Eduard Farber, Washington, D. C., assignor to Timber Engineering Co., Washington, D.C., a corporation of Delaware.

The process of treating the ligninic residue of the hydrolyzation of the carbohydrates of wood, which comprises mixing the residue with alkali in the proportions, by weight, of one hundred (100) parts of the residue to between about twenty (20) and about two hundred (200) parts of the alkali, and heating the mass and maintaining it at a temperature between about 150° C. and not substantially above 250° C., until the residue has substantially resinified.

# LYNCH *Cuts Packaging Costs—*



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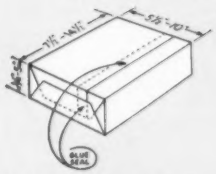

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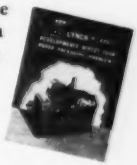
If production costs worry you, try stream-lining that packaging operation. The Lynch MORPAC, illustrated, is an exclusive development for the graphic arts. Designed primarily to wrap or band ream paper, tablets and pads, loose leaf fillers and books of all kinds, it handles most rectangular objects within its size range. Requiring only one operator, it wraps up to 1,000 packages per hour. Speed plus savings from 30% to 40% per package on wrapper application mean it pays for itself in a relatively short time. Write for folder giving more details on how Lynch MORPAC Paper Packaging Machine saves you money. →



PAR AIR COMPRESSORS

PAR REFRIGERATION COMPRESSORS

WRAP-O-MATIC CANDY & COOKIE WRAPPING MACHINES

# LYNCH

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GLASS FORMING MACHINES

# Trends

Office of the PAPER TRADE JOURNAL,
Wednesday, April 27, 1949.

Acceptance of the fact that general business failed to register the sizable pickup hoped for by mid-April is described as "hope deferred." *Business Bulletin* of La Salle Extension University "finds the prevailing attitude a combination of uncertainty and cautious confidence."

"Business volume is maintained by the combination of adequate purchasing power and the willingness of buyers to use that purchasing power in providing a market for the output of goods and services," says the *Bulletin*. "Much will depend upon consumer attitudes and the degree of confidence which businessmen have in the future but as long as the basic factors affecting demand remain strong as they now are, a high level of business activity can be maintained. A moderate reduction from the very high peak of last year need not be disturbing."

### Production Trends

It finds production trends much more favorable than many current reports indicate, output being within 5 percent of the abnormally high postwar peak. To offset adverse indications which have been widely publicized, such as decline in retail trade, rise in unemployment, etc., "are peak operations in the steel industry, automobile production at postwar high, and the stability shown in the general indexes which are designed to measure total output of factories and mines."

Concerning the lag in the volume of freight being transported, the *Bulletin* points up contributing factors: sharp drop in the shipment of coal, also that the "amount of freight carried by railroads is somewhat greater than is indicated by the number of cars loaded, as the average amount carried by each car is being steadily increased." Large output of motor trucks and tires has enabled the trucking industry to expand operations so that the amount of freight carried has been running about 5 percent higher than last year. "Not only is the percentage becoming larger but the freight is being transported longer distances," it is stated.

Production of steel shows an increase of 7 percent over high of a year ago. Unfilled orders are still large with demand sufficient to keep operations at a high level for a considerable period.

The automobile industry has been averaging well over 115,000 units weekly, reaching the record high of 129,068 during the week of April 22. Demand for low-priced cars is judged sufficient to assure capacity operation for many months.

Activity in building points to a substantial pickup. Reduction in retail sales, said to be about 3 percent behind last year, denotes some reduction in prices and some shift to lower-priced items; and is seen as changes in direction of "restoring relations which prevail in more nearly normal times."

### Watch Price Trends

A significant trend to watch will be commodity price trends, says *Business Bulletin*. "A slow decline, especially among those commodities which are still high in comparison with others, will be constructive and indicate that the readjustment is taking place smoothly. . . . Business booms either in prices or in production have never lasted indefinitely; and the present one in both fields has continued much longer than any preceding one."

### New York Prices

Following the lead of a major New England producer, volume grades of paperboard took a general cut of $5 a ton during the week ended April 23. Filled news and plain chip moved down to $75, bleached manila lined chip to $97.50, white patent coated to $97. Kraft liners and .009 corrugated are reported firm and unchanged.

Easing in *offset book* is understood to be fairly general, and amounts to about one-half cent a pound.

Widespread caution about inventories in face of softened supply condition, increasing problems of warehousing space and costs, plus demand for immediate delivery of an order, make adjustment to so-called "changing conditions" an endless challenge at the merchant level which the mills appear to recognize.

### Wood Pulp

Undertone of the market is soft. *Quotably* prices are unchanged, but reports of *offers* reflect heavy available supply and slow buying. "Market pulp mills selling on contract are encountering competition from spot market offers of surplus pulp made by integrated domestic mills whose sales of paper have not kept pace with their pulp production," reports the U. S. Department of Commerce in its April 22 release.

Mill inventories, though held to be considerably reduced, are getting close scrutiny. Wherever possible, it appears that higher grades of waste paper are being used as pulp substitutes, and at considerable savings.

### Foreign Exchange Trend

While recognizing the fact that adjusting exchange rates "is a matter requiring difficult decision" and one which "may bring about repercussions on the internal economy of the country making the change," Secretary of the Treasury John W. Snyder said in Minneapolis on April 23 that some of Europe's Marshall Plan countries may have to make an adjustment of their exchange rates before 1952.

Speaking at a conference of bankers of the Ninth Federal Reserve District, Mr. Snyder said in part that:

"The Europeans must make greater effort to produce goods and offer to sell them in Western Hemisphere markets at competitive prices." In turn, the U. S. must try to take more imports so that the Europeans will have dollars to pay for American goods which they want. Reducing trade barriers through international agreements is "part of our contribution to solution of the problem," Mr. Snyder said.

### Export Trade†

*Iran*—Annual capacity of Iran's first paper mill is planned for 4,000 to 4,500 metric tons of writing and packing papers, and is based on studies of Iranian imports. It is planned to manufacture these products at less cost than imports and thus to capture the entire Iranian market. Although no request has been made, it would be in line with the policy of protecting domestic industry for the Government, if called upon, to aid the paper mill by prohibiting imports of writing and packing paper, by reducing import quotas to a bare minimum, or by increasing the duty, the OIT reporter at Tehran advises.

*Venezuela*—OIT reports through its representative in Venezuela that duty-free entry of specified printing paper, classified under Tariff Item 239, has been extended until June 30, 1949. This concession applies to white paper in rolls or bobbins, uncalendered, without gum or sizing, weighing more than 50 grams per square meter, for use exclusively in printing of newspapers, magazines and books of a cultural nature. Tariff exemption also may be extended to similar paper when imported in sheets, upon submission of satisfactory proof that it has not been possible to obtain paper in rolls because of conditions in the paper market. Prior import license is required in each case for obtaining duty-free entry.

### Indexes

Index of general business activity for the week ended April 16 held level of the preceding week at 146.7, compared with 143.6 in the corresponding week of 1948. Index of paperboard production rose to 164.5 from 157.9 in the preceding week, compared with 183.5 in the corresponding week of 1948.

Comparative ratios of U. S. paper and paperboard production to mill capacity, as reported by AP&PA are:

| | Apr. 16 1949 | Apr. 9 1949 | Apr. 17 1948 | Apr. 18 1947 | Apr. 19 1946 |
|---|---|---|---|---|---|
| Paper** | 89.7 | ‡87.4 | 100.4 | 105.9 | 102.5 |
| Paperboard | 80.0 | 77.0 | 100.0 | 102.0 | 101.0 |

** Capacity in tons: 180,061; 1948, 176,163.
‡ Revised.

### Paperboard Production (Tons)

| | Apr. 16 1949 | Apr. 9 1949 | Apr. 17 1948 |
|---|---|---|---|
| Production | 165,853 | 159,449 | 186,438 |
| New Orders | 144,710 | 173,654 | 160,524 |
| Unfilled Orders | 276,572 | 287,725 | 403,000 |

Percent of Activity, Current 80%; Year, 83%.
† Source: Office of International Trade, Pulp and Paper Branch.

MORE PUMP
POMONA!
Any way you measure it, a Fairbanks-Morse Pomona gives you more for your pump dollar . . . in performance . . . in efficiency . . . in low-cost operation and maintenance.
Combine such features as true water lubrication . . . trouble-free open impellers . . . smooth, quiet revolvable rubber shaft bearings . . . simple "at the surface" capacity adjustment . . . plus the Fairbanks-Morse reputation for unsurpassed quality . . . and it's easy to see why.
Your Fairbanks-Morse Pomona Pump Distributor or branch pump engineer will be happy to give you the complete story on the pump that gives you more . . . *Pomona!*- Fairbanks, Morse & Co., Chicago 5, Ill.
FAIRBANKS-MORSE
A name worth remembering
DIESEL LOCOMOTIVES • DIESEL ENGINES • PUMPS • SCALES • MOTORS
GENERATORS • STOKERS • RAILROAD MOTOR CARS and STANDPIPES
FARM EQUIPMENT • MAGNETOS

# Imports

Week Ending April 23

### NEW YORK

#### Newsprint

News Syndicate Co., Alabaman, Antwerp, 316 rolls.

Gilman Paper Co., Rydboholm, Helsingfors, 352 rolls.

Madden Reeve Angel & Co., Inc., Mormacfir, Helsingfors, 660 rolls.

Pagel Horton & Co., Inc., Lyngenfjord, Oslo, 1001 rolls.

#### Cigarette Paper

F. J. Schweitzer, Agwidale, Havana, 80 cs.

#### Colored Paper

J. W. Hampton Jr. & Co., Ida Bakke, Antwerp, 2 cs.

D. F. Young, De Grasse, Havre, 3 cs.

#### Wallpaper

Meadows Wye & Co., Queen Elizabeth, Southampton, 1 cs.

C. A. Haynes & Co., Britannic, Liverpool, 62 ctns., 6 cs.

American Express Co., Britannic, Liverpool, 10 ctns.

R. F. Downing & Co., De Grasse, Havre, 19 cs.

#### Photo Paper

Lep Transport, Queen Elizabeth, Southampton, 1 cs. (insulating).

J. J. Gavin & Co., Queen Elizabeth, Southampton, 7 cs. (unsensitized).

#### Tracing Cloth

Keuffel & Esser Co., American Manufacturer, Manchester, 25 cs. (bleached cotton).

#### Gummed Paper

B. F. Drakenfeld & Co., American Manufacturer, Manchester, 47 cs.

B. F. Drakenfeld & Co., Britannic, Liverpool, 52 cs.

#### Cardboards

Intramar Shipping Corp., American Counselor, Antwerp, 121 cs.

#### Writing Paper

Rohner Gehrig & Co., De Grasse, Havre, 1 cs.

#### Boxboard

Jay Madden Corp., Mormacfir, Heisingfors, 119 rolls (folding).

#### Strawboards

Premier Decorations Inc., Ida Bakke, Antwerp, 56 bls.

#### Rags, Baggings, Etc.

Castle & Overton, Inc., Ida Bakke, Antwerp, 15 bls. woolen rags.

(———), Ida Bakke, Antwerp, 56 bls. bagging.

Midwest Waste Material Co., Ida Bakke, Antwerp, 162 bls. scrap bagging.

Irving Trust Co., Sheridan, Recife, 232 bls. tares.

1st National Bank of Boston, Carrier, Murmansk, 554 bls. cotton waste.

Williamson Northrup & Co., City of Khartum, Cochin, 200 bls. cotton waste.

C. Kutz, Leise Maersk, Shanghai, 100 bls. cotton waste.

C. Comiter, Leise Maersk, Shanghai, 100 bls. cotton picker waste.

Midwest Waste Material Co., Coral Sea, Rotterdam, 40 bls. bagging.

E. J. Keller Co., Inc., Hellenic Sky, Alexandria, 61 bls. old white cotton rags.

J. Cohen & Sons, Britannic, Liverpool, 13 bls. new grey linen cuttings.

(———), Britannic, Liverpool, 17 bls. new wool rags.

J. J. Rozendaal, Inc., Paul Revere, Santos, 121 bls. jute bagging.

Irving Trust Co., Selma Thorden, Copenhagen, 59 bls. old bagging.

#### Old Rope

Bemis Bros. Bag Co., Eucadia, Glasgow, 77 coils.

#### Gluestock

(———), Agwidale, Havana, 80 bls.

#### Woodpulp Boards

Jay Madden Corp., Rydboholm, Helsingfors, 57 rolls (solid white).

Jay Madden Corp., Mormacfir, Helsingfors, 124 bls., 68 rolls (solid white).

### BOSTON

Elof Hansson, Inc., Selma Thorden, Oxelosund, 305 bls. cellulose.

### PHILADELPHIA

Madden Reeve Angel & Co., Inc., Rydboholm, Helsingfors, 684 rolls newsprint, 579 rolls wrapping paper.

Pulp Sales Corp., Rydboholm, Helsingfors, 2135 bls. prime strong unbleached sulphite pulp.

Madden Reeve Angel & Co., Inc., Mormacfir, Helsingfors, 556 rolls wrapping paper.

Castle & Overton, Inc., Lyngenfjord, Tofte, 2850 bls. dry bleached sulphite pulp.

National City Bank, Lyngenfjord, Tofte, 223 rolls newsprint.

1st National Bank Cincinnati Lyngenfjord, Tofte, 232 rolls newsprint.

### NORFOLK

Darmstadt Scott & Courtney, American Manufacturer, Manchester, 55 bls. old bagging.

### BALTIMORE

Madden Reeve Angel & Co., Inc., Rydboholm, Helsingfors, 1160 rolls newsprint.

Pulp Sales Corp., Rydboholm, Helsingfors, 1365 bls. prime unbleached strong sulphite pulp.

Washington Daily News, Rydboholm, Norrkoping, 340 rolls newsprint.

Castle & Overton, Inc., Lyngenfjord, Tofte, 450 bls. dry bleached sulphite pulp, 350 bls. bleached sulphite pulp.

J. J. Rozendaal, Inc., Ida Bakke, Antwerp, 48 bls. old bagging.

Perkins Goodwin & Co., Selma Thorden, Norrsundet, 2600 bls. dry woodpulp.

Guaranty Trust Co., Selma Thorden, Gothenburg, 77 bls. rags.

### MIAMI

Madden Reeve Angel & Co., Inc., Rydboholm, Helsingfors, 1796 rolls newsprint.

### NEW ORLEANS

Madden Reeve Angel & Co., Inc., Rydboholm, Helsingfors, 773 rolls newsprint.

## Duty Determinations

NEW YORK — Constantly increasing quantities of paper napkins, seriettes and similar articles are being imported from England and being taken to the U.S. Customs Court on protests by the importers against the rates of duty assessed by Customs officials. According to Warren B. Bullock, manager of the import committee of the American Paper Industry, most of the napkins are being classified for duty at 35 percent as manufactures of paper, but claimed by the importers to be dutiable as paper cut into shape at 15 percent. The napkins are of different types, some creped, others decorated with floral designs, still others embossed. While the bulk of the shipments are from England, Norway is also shipping some specialties, and a shipment printed in colors in the American zone of Germany has been received at New York.

An importer of a so-called tabulating card stock claims the material is dutiable as paperboard, but the Customs officials believe it is a vat-lined board, one surface being of a different character from the base.

The Customs officials have classified a Canadian paper for use in cash registers as a writing paper because of its finish and furnish, despite the claim of the importer to the lower rate of duty for printing paper.

Seven shipments of Finnish kraft wrapping paper have been held by the officials at Philadelphia to have been undervalued by the omission from the declared value of the Finnish inland freight from the mill to seaboard.

## Canadian Carloadings

OTTAWA—Car loadings on the Canadian railways of woodpulp and paper increased slightly to 3,937 cars for the week ended April 9 compared with 3,926 cars in the preceding week ended April 2, though down as against the similar week ended April 10, 1948, when car loadings reached 4,543 cars, the Canadian Government announces.

The Eastern Division accounted for 3,378 cars in the week ended April 9 against 3,464 in the preceding week and 4,022 cars in the week ended April 10 last year. The Western Division accounted for 559 cars in week ended April 9 against 462 cars in previous week and 521 cars in week ended April 10, 1948.

In the cumulative total of such carloadings from the beginning of this year until the week ended April 9, there was a drop to 60,607 cars this year compared with 63,125 cars in the similar period a year ago, with the Eastern Division dropping to a total of 52,775 this year as against 55,030 cars a year ago and the Western Division falling down to 7,832 cars this year compared with 8,095 cars last year during the same period.

## Primary Iron-Steel

OTTAWA — Imports of primary iron and steel from the United States during January this year, in forms, included the following for the pulp and paper industry, the Canadian Government reports:

Plates, boiler, pulp-mill digesters, 550 tons carbon; pulp mill digesters, pipes and tubes, hot finished, 9 tons carbon; cold drawn, 138 tons carbon, 3 tons alloy and 4.7 tons stainless; welded, 66 tons carbon.

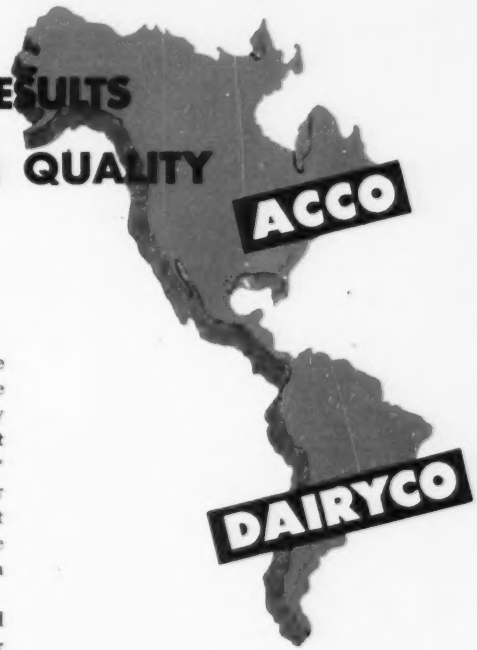
## 4th Anniversary Number

CALCUTTA—*Indian Pulp & Paper* will enter into the fourth year of its existence in July next and an anniversary number will be published to mark that occasion, D. K. Jha, the publisher, reports.

# Paper Product Pointers
## FROM CYANAMID

*Re: Wider Markets for Paper...*

# GOOD COATING RESULTS DEMAND UNIFORM QUALITY CASEIN...




In the manufacture of casein, every step in the process, from skimming the milk to packaging the finished product, must be carefully supervised. Any deviation from standards could noticeably affect quality and performance. Cyanamid's ACCO** Brand of domestic casein is manufactured under close supervision and is quality-controlled for strict uniformity. Customers are therefore assured of the finest coating agent and binder for paper when they buy ACCO Casein.

Equally high quality and uniformity are assured with DAIRYCO Brand of Argentine casein, for which Cyanamid is sole U.S. agent. In addition, Cyanamid's laboratories are constantly working on evaluation methods and improved procedures for applying casein to paper. Thus, Cyanamid is in an excellent position to meet all casein needs of any paper manufacturer: with domestic or imported casein, and with Technical Service to help solve coating problems. Consult our nearest representative about casein—or the many other Cyanamid chemicals for more efficient paper-making.

**ALWAX**** Sizes • **WAXINE*** Sizes • Rosin Size • **PAREZ*** Resins Synthetic Resins • Casein • Alum • Sulfonated Oils • Fillers Defoamers • Soda Ash • Caustic Soda • Salt Cake • Acids • Clays **AEROSOL*** Wetting Agents • **CAL MICRO**** (Calcium Carbonate) **AZITE**** Liquifier 900 and other Paper Chemicals.

**Reg. U. S. Pat. Off. **Trade-mark*

*Sales Offices:* Boston, Mass.; Philadelphia, Pa.; Pittsburgh, Pa.; Baltimore, Md.; Charlotte, N. C.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; Detroit, Mich.; Kalamazoo, Mich.; St. Louis, Mo.; Los Angeles, Calif.; San Francisco, Calif.; Seattle, Wash. In Canada: Dillons Chemical Co., Ltd., Montreal and Toronto.

*AMERICAN Cyanamid COMPANY*
INDUSTRIAL CHEMICALS DIVISION
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

# Prices

**Quotations indicate trends in an open market. At the moment they can be of little more value. While some volume business still is done under contract at the figures shown, fluctuations are too varied and frequent to permit prices to be interpreted as representing a wholly stabilized market.**

## NEW YORK

### Paper

Delivered New York

**Standard News,** per ton—

| | | |
|---|---|---|
| **Rolls, contract** | $100.00/ | — |
| **Sheets** | 115.00/ | — |

**f.o.b. mill, varying freight allowances, Zone 1.**

**Kraft**—per cwt., 40# base wgt.

| | | |
|---|---|---|
| No. 1 Wrapping Rolls | $7.75/$8.00 | |
| No. 1 Wrapping Sheets | 8.25/ 8.50 | |
| **Standard Wrapping Rolls** | **7.00/** | **—** |
| **Standard Wrapping Sheets** | **7.50/** | **—** |
| Standard Bag | 6.50/ | — |
| **Multiwall Bag, 40# and heavier, 24x36 (500 sheets)** | | |
| Southern | 7.50/ 7.75 | |
| **Northern** | **8.85/10.15** | |

**Tissues**—per ream 24x36 (480) 10/11 lbs. 2500 lbs. or more

| | | |
|---|---|---|
| Wh. No. 1 Frd. | $1.60/$1.70 | |
| Wh. No. 1 M. G. | 1.60/ 1.80 | |
| Wh. No. 1½ | 1.55/ | — |
| Wh. No. 2 | 1.40/ 1.45 | |
| Kraft Anti-Tar | 1.45/ 1.62 | |
| Kraft Unbl. | 1.75/ | — |
| Shrd. Wh. No. 1 per lb. | .11½/ | — |

**Toilet**—per case of 100 rolls—1 M sheets.

| | | |
|---|---|---|
| Unbleached 4½x4½ | $6.80/ | — |
| Unbleached 4½x5 | 5.85/ | — |
| Bleached 4½x4½ | 7.70/ | — |
| Bleached 4½x5 | 8.00/ 8.80 | |

Per Case of 50 rolls—1500 sheets

| | | |
|---|---|---|
| Unbleached 4½x4½ | $5.50/ | — |

Per Case of 50 rolls—2000 sheets

| | | |
|---|---|---|
| Unbleached 4½x4½ | 6.70/ | — |
| Bleached 4½x4½ | 7.40/ | — |

**Paper Towels**—per case of 3750—Zone 1.

| | | |
|---|---|---|
| **Wh. Jr. M'tif'd 9¼x9½** | **$5.45** | |
| **Br. Sr. M'tif'd 10x12** | **3.80** | |
| **Br. Jr. M'tif'd 9½x9¼** | **3.30** | |
| **Br. Jr. Sgl. fold 10x10¾** | **3.35** | |

**Manila,** per cwt.

| | | |
|---|---|---|
| **No. 1 Jute Tag, sheets*** | $15.05/ | — |
| **Reg. Jute M.F. Manila, sheets*** | 13.50/ 15.50 | |
| **No. 1 Manila Wrapping** | **8.75/ 10.50** | |
| Printing Manila | 10.00/ 11.00 | |

* Less usual allowance for rolls.

**Boards,** per ton—

| | | |
|---|---|---|
| Filled News | $77.50/ | — |
| Plain Chip | 75.00/ | — |
| Blchd. Mla. L.d. Chip* | 97.50/ | — |
| White Pat. coated* | 115.00/ | |
| **Kraft Liners 42 lb.** | **105.00/** | |
| **Kraft Corr. .009** | **110.00/** | |
| **Binders Boards** | **120.00/126.00** | |

* Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following prices are representative of distributors' resale prices, all deliveries in Zone 1:

**Rag Content Bonds and Ledgers**—White, 20 lb.

**Bonds,**

| | 4 Ctns. per cwt. |
|---|---|
| 100% Rag Ex. No. 1 | $51.40/$53.90 |
| 100% Rag | 44.55/ 46.15 |
| 75% Rag | 33.90/ 35.40 |
| 50% Rag | 28.10/ 29.55 |
| 25% Rag | 24.85/ 26.80 |

**Ledgers,**

| | 4 Ctns. per cwt. |
|---|---|
| 100% Rag Ex. No. 1 | $52.65/$54.55 |
| 100% Rag | 45.65/ 46.40 |
| 75% Rag | 35.15/ 36.10 |
| 50% Rag | 29.40/ 30.05 |
| 25% Rag | 26.15/ 26.80 |

**Sulphite Bonds and Ledgers**—White, 20 lb.

**Bonds,**

| | 4 Ctns. per cwt. |
|---|---|
| No. 1 | $18.35/ — |
| No. 2 | 17.50/ 18.80 |
| No. 4 | 16.80/ 17.45 |

**Ledgers,**

| | 4 Ctns. per cwt. |
|---|---|
| No. 1 | $19.65/ — |
| No. 2 | 18.80/ — |
| No. 4 | 18.10/ — |

**White Book,**

| | Case per cwt. |
|---|---|
| Conversion Coated | |
| No. 1 | $20.75/$20.90 |
| No. 2 | 19.50/ 19.65 |
| No. 3 | 18.15/ 18.90 |
| Machine Coated | |
| No. 1 | 16.40/ 17.00 |
| No. 2 | 14.90/ 16.50 |
| Uncoated | |
| No. 1 Antique (Watermarked) | 16.40/ 17.90 |
| Offset | 15.15/ 17.15 |
| A Grade E. F. | 15.40/ — |
| A Grade S. C. | 15.90/ 16.15 |
| B Grade E. F. | 14.90/ 15.15 |
| B Grade S. C. | 15.40/ 15.65 |

### Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)

| | |
|---|---|
| **Coarse Polished—India** | **.35½/ .36½** |
| **Fine Polished India** | **.41½/ .45** |
| **Unpolished—Paper Makers** | **.32¼/ .34½** |
| **Tube Rope** | **.33¼/ .35½** |
| **Wrapping** | **.36 / .38¼** |
| **Cotton** | **.58 / .60** |
| **Polished Cotton** | **.55 / —** |

(Hard Fiber)

| | |
|---|---|
| **Mex. Sisal** | **.21 / .27** |

(American Hemp)

| | |
|---|---|
| **Polished Hemp** | **.46½/ .48** |
| **Unpolished** | **.35 / .37¼** |

## World Wood Pulp Markets

### Second Quarter Contract Prices, Per Short Air-Dry Ton

| | Delivered, with varying freight allowances | | On dock Atlantic Ports Varying freight allowances | | |
|---|---|---|---|---|---|
| | U. S. | Canadian | Swedish | Finnish | Norwegian |
| Groundwood | $75.00/ — | $75.00/ — | | | |
| Sideruns Pulping News | | 80.00/ 90.00 | | | |
| Soda, Bleached | 125.00/ — | 125.00/ — | | Competitive | |
| Sulphate, Bleached | $132.50/136.50 | 136.00/140.00 | $130.00/140.00 | | |
| Sulphate, Unbl'd North'n | 105.00/ — | 105.00/112.50 | 105.00/112.50 | with | |
| Sulphate, Unbl'd South'n | 95.00/ — | | | | |
| Sulphite Blchd. (S'ftw'd) | 126.00/130.00 | 130.00/135.00 | 130.00/132.50 | Canadian | $125.00/ — |
| Sulphite, Blchd. (H'dw'd) | 125.00/ — | | | | |
| Sulphite, Unbleached | 115.00/118.00 | 118.00/ — | $110.00/118.00 | Grades | |
| Sulphite, Unbl'd (Glassine) | 121.50/ — | 125.00/ — | 122.00/127.50 | | |

‡ Southern. ‖ Flat; no freight allowed.

## Waste Paper Market

### Prices to Mills. Quotations Nominal

F.O.B. Shipping Point (Per Ton)

| | New York Apr. 21 | Philadelphia Apr. 4 | Boston Apr. 16 | Chicago Apr. 6 |
|---|---|---|---|---|
| No. 1 Mixed Paper | $5.00/ — | 3.00/ 5.00 | $4.00/ $6.00 | $5.00/ — |
| Boxboard Cuts | 6.00/ 7.00 | 3.00/ 4.00 | 12.00/ — | 7.00/ — |
| Mill Wrappers | 12.00/ 14.00 | 6.00/ 8.00 | 15.00/ — | 7.00/ — |
| No. 1 News | 10.00/ 11.00 | 6.00/ 8.00 | — / 9.00 | 11.00/ — |
| Over-issue News | 15.00/ 16.00 | 8.00/ 10.00 | 11.00/ 12.00 | 15.00/ — |
| Corrugated Containers | 11.00/ 12.00 | 9.00/ 10.00 | 10.00/ 11.50 | 12.00/ — |
| New Corrugated Cuts | 15.00/ 16.00 | 18.00/ 20.00 | 16.00/ — | 15.00/ — |
| Double Kraft Ld. Corr. Cuts | 25.00/ — | 25.00/ 30.00 | 25.00/ — | 35.00/ — |
| Used Kraft Bags | 25.00/ — | 14.00/ 18.00 | 14.00/ 18.00 | 20.00/ — |
| No. 1 Brown Kraft Paper | nominal | 20.00/ 25.00 | 25.00/ — | 20.00/ — |
| Super Resorted Br. Kraft | 30.00/ 35.00 | 30.00/ 32.00 | 40.00/ — | 40.00/ — |
| New Br. Kraft Env. Cuts | 70.00/ — | 60.00/ 65.00 | 60.00/ 65.00 | 60.00/ — |
| New Br. Kraft Cuts | 50.00/ 55.00 | 45.00/ 50.00 | 45.00/ — | 40.00/ — |
| No. 1 Gdwd. Shvs. | 20.00/ 25.00 | 14.00/ 16.00 | 25.00/ — | 23.00/ — |
| White Newsblanks | 60.00/ 65.00 | 60.00/ 65.00 | — / 60.00 | 40.00/ — |
| No. 1 Flyleaf Shvs | 30.00/ 35.00 | 18.00/ 20.00 | 35.00/ 40.00 | 35.00/ — |
| No. 1 Soft Wht. Shvs. | 65.00/ 70.00 | 60.00/ 65.00 | 70.00/ 80.00 | 55.00/ — |
| Super Soft Wht. Shvs. | 85.00/ 90.00 | 80.00/ 85.00 | 80.00/110.00 | 65.00/ — |
| Hd. Wht. Shvs. | 80.00/ 85.00 | 70.00/ 75.00 | 80.00/ — | 90.00/ — |
| Hd. Wht. Env. Cuts | 95.00/100.00 | 90.00/ 95.00 | 90.00/105.00 | 90.00/100.00 |
| New Manila Env. Cuts | 60.00/ 70.00 | 60.00/ 65.00 | 60.00/ 70.00 | 65.00/ — |
| Col. Tab Cards | 30.00/ 40.00 | — / — | — / — | — / — |
| Manila Tab Cards | 60.00/ 65.00 | 55.00/ 60.00 | 65.00/ 75.00 | 35.00/ — |
| No. 1 Mixed Ledger | 30.00/ 32.50 | 20.00/ 25.00 | 37.50/ — | 30.00/ — |
| White Ledger | 35.00/ 40.00 | 30.00/ 35.00 | 45.00/ 50.00 | 35.00/ — |
| Mixed Books & Mags. | 7.00/ 8.00 | 7.00/ 8.00 | 12.00/ — | 5.00/ — |
| No. 1 Rep'd Hvy. Books & Mags. | 15.00/ 17.00 | 10.00/ 12.00 | 22.00/ 23.00 | 20.00/ — |

## Rag Market

### New Domestic Cotton Cuttings

(Prices to Dealers, F.o.b. Ship. Pt.)

| | Per 100 lbs. | |
|---|---|---|
| White Shirt | $10.00/ | $10.50 |
| Unbleached Muslin | 10.00/ | 10.50 |
| Light Silesias | 7.00/ | 7.50 |
| White Back Blue Overalls | 6.25/ | 6.50 |
| Blue Overalls | 6.00/ | 6.25 |
| Fancy Shirt | 4.50/ | 5.00 |
| Percales | 5.50/ | 6.00 |
| Light Prints | 5.50/ | 6.00 |
| **No. 1 Washables** | **3.00/** | **3.25** |
| Bleachable Khaki | 5.00/ | 5.50 |
| Unbleachable Khaki | 4.50/ | 5.00 |
| Cottonades | 4.25/ | 4.75 |
| Lt. Flannelettes | 7.00/ | 7.50 |
| Men's Corduroy | 3.50/ | 4.00 |
| Women's Corduroy | 3.00/ | 3.50 |

*(Continued on page 36)*

# the very idea!

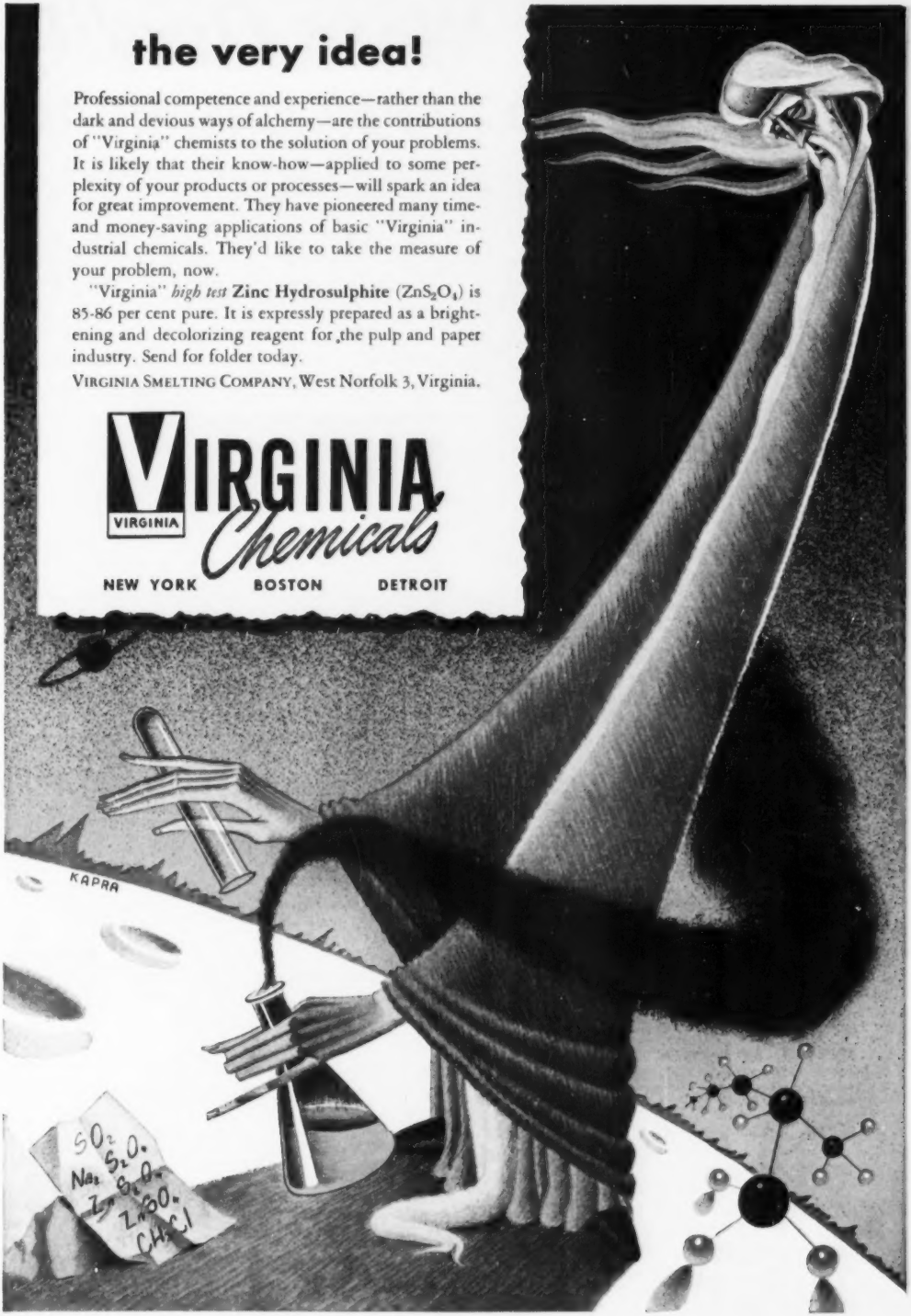
Professional competence and experience—rather than the dark and devious ways of alchemy—are the contributions of "Virginia" chemists to the solution of your problems. It is likely that their know-how—applied to some perplexity of your products or processes—will spark an idea for great improvement. They have pioneered many time- and money-saving applications of basic "Virginia" industrial chemicals. They'd like to take the measure of your problem, now.

"Virginia" *high test* **Zinc Hydrosulphite** ($ZnS_2O_4$) is 85-86 per cent pure. It is expressly prepared as a brightening and decolorizing reagent for the pulp and paper industry. Send for folder today.

VIRGINIA SMELTING COMPANY, West Norfolk 3, Virginia.

VIRGINIA *Chemicals*

NEW YORK BOSTON DETROIT



# When *Quality*
# NOPCO PAPER CHEMICALS

. . . for Nopco Paper Chemicals are specifically designed to meet the varied needs of pulp and paper manufacture—to help produce paper that promotes customer satisfaction, repeat business, word-of-mouth recommendation, increased sales.

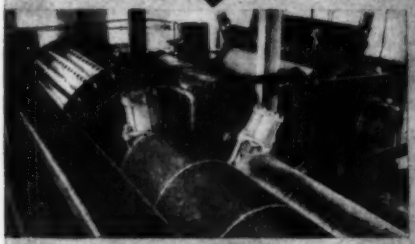
Nopco Paper Chemicals eliminate many operating difficulties, cut costs, save time, improve the finished sheet. In addition to items listed here, they include soaps, synthetic resin emulsions, plasticizers and lubricants for use in all phases of manufacture—whether paper, paper board, insulating board, pulping and rag cooking, tissue, or converting. Full information is yours for the asking. Write us today.

Courtesy of Eastern Corp., Bangor, Me.

## DIGESTER

**NOPCO Nopalcol*** An additive that helps to reduce cooking time of sulphite pulp.

Pitch Control is initiated here by the addition of a solvent. This solvent aids in keeping liberated pitch in solution so it may be effectively handled later in the system.



## WASHERS

### Pitch Control

**NOPCO 1216-V** Used in the Washer, Nopco 1216-V emulsifies the solvent and the pitch in the solvent to reduce the liberated pitch content of sulphite pulp.

### Foam Control

**NOPCO KF (for Sulphite)** With its unique ability to destroy foam, Nopco KF increases the operating efficiency of pulp screening and pulp refining equipment.

**NOPCO 1333-B (for Kraft)** Here is a highly concentrated product that eliminates foam and promotes efficiency in the production of sulphate pulp.

OTHER EFFICIENT NOPCO DEFOAMERS for use in pulping and bleaching operations are: NOPCO KFH, NOPCO KFS, NOPCO 1519, NOPCO Vegifat Y.

## BEATER

### Sizing

**NOPCO 2251-X, NOPCO 2251-B** These anhydrous wax size bases are prepared for easy handling in the mill. Nopco 2251-X requires the addition of water only; Nopco 2251-B, the addition of wax and water. Both yield emulsions stable from infinite dilutions up to 70% solids.

**NOPCO 2252 — Paraffin Wax Size** An efficient sizing agent, giving a consistently uniform size unaffected by water conditions, pumping action or operating temperature. Equally effective in all types of furnishes. Stable in any dilution. Ideal for mills with small requirements or limited mixing facilities.

**NOPCO 2146-R** A high free rosin size emulsion, particularly valuable in hard water areas.

**NOPCO Size I** An efficient waterproofing agent for asbestos paper—and photographic printing papers, where chemical stability of sizing agent is essential.

### Softening

**NOPCO Softener #73** Specifically formulated for use in manufacture of high grade tissue and towelling. Stabilizes the absorbency of the finished sheet and gives unusual softness. The affinity which this cationic softener has for the fibers, permits its addition at the beater or at any convenient point in the stock preparation cycle.

NOPCO
EVOLVED THRU RESEARCH

# NOPCO CHEMICAL
*Formerly National Oil Products*

# does the talking

## *turn Prospects into Buyers*

"WET" END OF PAPER MACHINE

**Sheet Formation**

**NOPCO KF** Improves sheet formation, even at increased machine speeds, by eliminating foam and faulty fiber dispersion; dissipates entrained air. Outstanding advantages: at least 75% reduction of thin spots, reduced breaks; improved surface characteristics.

**Clean Up**

**NOPCO 1216-V** This emulsifier, when used with a solvent, removes asphalt and pitch deposits from metallic surfaces. An excellent medium for cleaning screens, wire and suction rolls.

Courtesy of Whippany Paperboard Co., Whippany, N. J.

PRESSES

**Felt Washing**

**NOPCO Syntergent*K** A felt washing compound that may be used on or off the machine. Mixes readily with warm or cold water; gives a rich, persistent lather. Dispersible and stable in dilute acid or alkaline mediums. Rinses out freely when washing is complete; leaves felt soft and well napped.

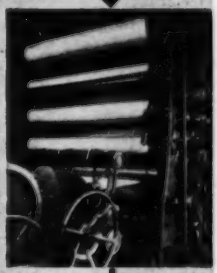
Courtesy of Black-Clawson Co., Hamilton, Ohio

DRYER SECTION

**Machine Coating**

**NOPCO ESI** Improves flow characteristics as well as brightness and gloss. May be used in casein or starch coatings.

**NOPCO 1400-B (Ammonium Stearate)** Functions as a plasticizer, and aids in controlling dusting on the calender rolls.



MACHINE CALENDER STACK

**NOPCO 2252 — Paraffin Wax Size** Besides being used in the Beater, Nopco 2252 may be used as top or surface size in the Size Press or Calender Water Box. Often employed with starch, glue or casein emulsions. Improves printing qualities and increases scuff resistance of paper board.

**NOPCO ESI** Used in conjunction with starch to improve gloss ink printing on folding box board.

CONVENTIONAL COATING

**NOPCO 1400-B (Ammonium Stearate)** Added to coating color formulations, Nopco 1400-B plasticizes the coating; helps to minimize dusting during supercalendering.

**NOPCO 1600-B** May be used advantageously for all general defoaming and evening requirements. Minimizes fish eyes and similar defects. Works well with colored coatings...

**NOPCO Sulfonated Oils and Fats** Incorporated into the coating mix, these materials impart plasticity, reduce foam, promote evenness of application.

**NOPCO ESI** Flow, brushing characteristics, brightness and gloss of casein and starch coatings are all improved by addition of Nopco ESI. Dusting troubles usually developing on the Super Calender are substantially reduced when Nopco ESI is added to coating color formulations.

**NOPCO 1810-L — Wax Emulsion** An acid stable wax size used to impart plasticity to coating color mixes.

*Reg. U. S. Pat. Off.

# COMPANY

*Company*

HARRISON, NEW JERSEY

Branches: BOSTON • CHICAGO • CEDARTOWN, GA. • RICHMOND, CAL.

# Prices

CONTINUED FROM PAGE 32

### Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. Ship. Pt.)

| | Per 100 lbs. | |
|---|---|---|
| **No. 1 Whites, Repacked** | **$4.25/** | **$4.75** |
| No. 1 Whites, Miscellaneous | 3.50/ | 4.00 |
| No. 2 Whites, Repacked | 2.75/ | 3.00 |
| No. 2 Whites, Miscellaneous | 2.00/ | 2.25 |
| Cotton Pants & Overalls | 2.75/ | 3.00 |
| Thirds and Blues, Repacked | 2.25/ | 2.50 |
| No. 1 Roofing Rags | 1.40/ | 1.50 |
| No. 2 Roofing Rags | 1.25/ | 1.35 |
| **No. 3 Jute Bagging** | **.95/** | **1.05** |
| **No. 4 Brussels & hrd. Bek'd crpts.** | **.90/** | **1.00** |
| **Roofing Bagging** | **.80/** | **.95** |

### New Foreign Cotton Cuttings

(Prices to Dealer, F.o.b. Dock, N. Y.)

| | Per 100 lbs. |
|---|---|
| New Dark Cuttings | |
| New Mixed Cuttings | |
| Light Silesias | prices |
| Light Flannelette | |
| New White Cuttings | are |
| New Unbleached Cuttings | |
| Fancy Shirt Cuttings | nominal |
| Light Prints | |
| Bleachable Khaki, No. 1 | |
| Unbl. Khaki, No. 1 | |

### Old Foreign Rags

(Prices to Dealer, F.o.b. Dock, N. Y.)

| | Per 100 lbs. |
|---|---|
| No. 1 White Cottons | |
| No. 2 White Cottons | |
| No. 3 White Cottons | |
| No. 4 White Cottons | prices |
| Extra Light Prints | |
| Old Light Prints | |
| Med. Light Prints | are |
| Dutch Blue Cottons | |
| Checks and Blues | |
| Linsey Garments | nominal |
| Dark Cottons, European | |
| Dark Cottons, Egyptian | |
| Old Shopperies | |
| New Shopperies | |

### Bagging

(Prices to Dealers, f.o.b. N. Y.)

| | Per 100 lbs. | |
|---|---|---|
| **Foreign Gunny, No. 1** | **$7.50/** | **$8.00** |
| Domestic Gunny, No. 1 | 7.50/ | 8.00 |
| Heavy Wool Tares | 6.50/ | 7.00 |
| **No. 1 Scrap Bagging** | **4.75/** | **5.00** |
| **Foreign Manila Rope** | **5.50/** | **5.75** |
| **Domestic Manila Rope** | **5.50/** | **5.75** |
| **Jute Strings** | **6.25/** | **6.50** |
| No. 1 Sisal Strings | 5.00/ | 5.25 |
| **Mixed Strings** | **1.15/** | **1.30** |

## PHILADELPHIA

### Domestic Rags (new)

(F.o.b. Eastern Shipping Point)

| | Per 100 lbs. | |
|---|---|---|
| **White Shirt** | **$10.25/** | **$10.50** |
| Light Silesias | 6.75/ | 7.00 |
| Unbleached Muslin | 10.00/ | 10.25 |
| Light Prints | 5.25/ | 5.50 |
| Washable No. 1 | 3.00/ | 3.50 |
| Blue Overall | 6.00/ | 6.25 |
| Percales | 5.50/ | 5.75 |
| Unbleachable Khaki | 4.00/ | 4.25 |
| Bleachable Khaki | 5.25/ | 5.50 |
| Men's Corduroy | 4.25/ | 4.50 |
| Ladies' Corduroy | 4.00/ | 4.25 |
| Cottonades | 4.25/ | 4.50 |
| Fancy Shirts | 5.25/ | 5.50 |

### Domestic Rags (old)

(F.o.b. Eastern Shipping Point)

| | Per 100 lbs. | |
|---|---|---|
| **Mixed White** | **$3.75/** | **$4.00** |
| Thirds and Blues Repacked | 2.50/ | 2.65 |
| Cotton Pants & Overalls | 3.00/ | 3.25 |
| **No. 1 Roofing Stock** | **1.15/** | **1.25** |
| **No. 2 Roofing Stock** | **1.10/** | **1.15** |
| Roofing Bagging | .85/ | .90 |

### Bagging

(F.o.b. Eastern Shipping Point)

| | Per 100 lbs. | |
|---|---|---|
| Old Manila Rope | $5.50 | — |
| **Foreign Gunny No. 1** | **8.00/** | **—** |
| **Domestic Gunny No. 1** | **8.00/** | **—** |
| **Sisal Strings No. 1** | **3.75/** | **—** |
| **No. 1 Scrap** | **5.50/** | **—** |
| No. 1 Jute Rope | 6.00/ | 6.50 |

## BOSTON

### Bagging

(F.o.b. Boston)

| | Per 100 lbs. | |
|---|---|---|
| Foreign Gunny | 7.50 | / 8.00 |
| Domestic Gunny | 8.25 | / 850. |
| Domestic No. 1 Old Rope | 6.00 | / 6.25 |
| **Foreign No. 1 Old Rope** | **6.50** | **/ —** |
| Mixed Strings | 1.35 | / |
| **Transmission Rope—Domestic** | 3.00 | / 3.50 |
| **Jute Carpet Threads** | — | / 4.00 |
| **Bleachery Burlap** | — | / 9.00 |
| **Scrap Burlap—** | | |
| Foreign | 6.50 | / 7.00 |
| Domestic | 6.50 | / 7.00 |
| South America | 8.25 | / 8.50 |
| Austr. Wool Pouches | 8.25 | / — |
| New Zealand Wool Pouches | — | / 6.00 |
| New Burlap Cuttings | 8.50 | / — |
| **Heavy Baling Bagging** | **—** | **/ 7.50** |
| **Paper Mill Bagging** | **—** | **/ 6.75** |

### Domestic Rags (New)

(F.o.b. Boston)

| | Per 100 lbs. | |
|---|---|---|
| New Light Prints | 5.75 | / 6.00 |
| Fancy Percales | 6.00 | / 6.25 |
| White No. 1 Shirt | 10.25 | /10.75 |
| **Light Flannelettes** | **—** | **/ 7.00** |
| **Canton Flannels, Bleached** | **—** | **/ 9.00** |
| Underwear Cutters, Bleached | 10.75 | /11.00 |
| Underwear Cutters, Unbleached | 10.00 | /10.25 |
| Blue Overalls | 6.25 | / 6.75 |
| Soft Unbleached | 10.00 | /10.75 |
| Blue Cheviots | 6.00 | / 6.50 |
| Fancy Shirt | 5.00 | / 5.25 |
| Washable | 3.25 | / 3.50 |
| Khaki Cuttings | 5.00 | / 5.25 |
| Men's Corduroy | 4.50 | / — |
| Khaki Canvas | — | / 5.50 |
| B. V. D. Cuttings | 10.00 | /10.25 |

### Domestic Rags (Old)

(F.o.b. Boston)

| | Per 100 lbs. | |
|---|---|---|
| No. 1 Whites, Repacked | $3.50 | /$4.00 |
| No. 1 Whites, Miscellaneous | 3.00 | / 3.50 |
| Twos and Blues, Repacked | — | / 2.00 |
| Cotton Pants & Overalls | 2.75 | / 3.00 |
| No. 1 Roofing Stock | — | / 1.30 |
| No. 2 Roofing Stock | — | / 1.20 |
| Roofing Bagging | — | / .90 |

# Markets

### Blanc Fixe

Supply ample. Prices firm. Currently quoted at $85.00 in bags, car lots, at works, 6 cents per pound, l.c.l., deld. By-product supply somewhat restricted. Quoted at $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

### Bleaching Powder

Steady improvement in supply. Demand and prices steady. Prices range from $4.25 to $4.75 per 100 pound drums, l.c.l., works.

### Casein

Demand dull. Current prices on processed acid precipitated casein at 20½ to 25 cents per pound for domestic grades and 20½ to 22 cents for imported grades, f.o.b. shipping point.

### Caustic Soda

Supplies available for prompt shipment. Carload prices firm. L.c.l. sales reported at competitive levels. Solid caustic is reported at $3.05 per cwt. flaked and ground is quoted at $3.45 per cwt., in 400 pound drums, $3.95 per cwt. in 100 pound drums—car lots at works; liquid 50 percent in tank cars at $2.40 per cwt.; liquid 73 per cent in tank cars at $2.50 per cwt., at works.

### China Clay

Demand easier, supply of domestic and imported ample. Prices firm. Domestic filler quoted at $10 to $12.50 per ton, car lots, f.o.b. mines. Coating clay is $15 to $25. Imported clay quotation, short tons, $16 to $35, export warehouse.

### Chlorine

Supply condition favorable. Seasonal pickup in demand due. Demand moderately strong. Prices firm. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt. in multi-tank cars, f.o.b., works.

### Rosin

Producers protest loan level in Wash. Hope for increased support buoys market. Demand deferred until outcome. Gum rosin in drums per 100 pounds net in car lots, f.o.b., Savannah: B, G, H, I, K, $5.60, Savannah; B, $4.25; FF, $5.50.

### Rosin Size

Supply good. Demand steady. Seventy percent gum and pale wood grades, tank cars, $4.95 to $5.05 f.o.b. southern shipping point.

### Salt Cake

Price eases $2.00 to $3.00 a ton. Pickup in demand noted at moderate level. Domestic quoted at $25.75, f.o.b. shipping point, freight allowed to destination.

### Soda Ash

In free supply. Demand easier. Carload prices firm. Some competitive cutting noted in l.c.l. lots. Current prices, car lots per 100 pounds; in bulk, $1.15; in paper bags, $1.40; and in barrels, $1.90.

### Sodium Bicarbonate

Supply ample. Demand good. Prices firm. Reported at $1.95 per cwt. paper bags, carload lots.

### Starch, Corn

Notice of 15c price advance effective May 9 brings spurt in orders of one processor. Demand fair. Supply ample. Pearl grade currently quoted at $4.67 per 100 pounds; powdered starch at $4.78 per 100 pounds; car lots, f.o.b. Chicago.

### Starch, Potato

Steady paper mill demand. Maine price firmed by Govt. purchases. Supply in Maine ample. Idaho mills out of market. Available ex-warehouse. High grade quoted at $7.00 cwt., ex. N. Y. whse.; $4.75 f.o.b. Maine; Pearl grade, $4.90 cwt. f.o.b. Maine.

### Sulphate of Alumina

Supply good. Demand steady. Prices firm. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.50 per 100 pounds in bags, car lots, at works.

### Sulphur

Demand sustained at good level. Supply good. Prices firm. Annual contracts are quoted at $18 per long ton, f.o.b. mines; $19.50, f.o.b. vessels, Gulf ports. Export price f.o.b. Gulf ports is $22.00 per long ton.

### Talc

Prices steady. Demand continues ahead of supply. Improvement due this year. Domestic grades are currently quoted at $23 per ton in paper sacks, f.o.b. mills; Canadian at $35 and up per ton. All prices in car lots.

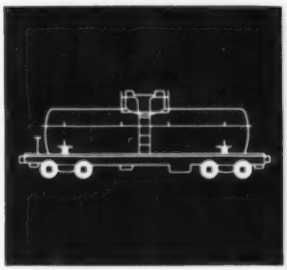
### Tapioca Flour

Supplies tighter on all grades. Demand fair. Prices steady. Superior high range from $10.50/$11.50 cwt.; high grades $9.50 cwt., on dock Atlantic and Gulf ports; medium grades range from $6.65/$7.50 cwt. on dock, N. Y.

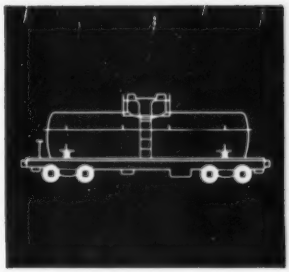
### Titanium Dioxide

Supply reported now in balance with eased demand. Prices firm. Anastase 19½c pound carload lots, 20c l.c.l., rutile, 21½c pound carload lots, 22½c l.c.l.; 50-pound bags, f.o.b. plant, actual freight allowed.

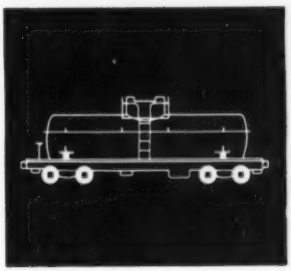
# 3 ways to cut bleaching costs with Caustic Soda



**1** Because less labor is required in unloading, storing and using liquid caustic soda, handling costs are substantially reduced.



**2** Soda bleach foams less in the washers than other bleaching chemicals. Draining and drying of the pulp are faster and more economical.



**3** The use of soda bleach insures a cleaner finished paper, with a minimum reversion of brightness.

Caustic Soda provides several cost-saving advantages in the preparation and bleaching of wood, rag, straw and wastepaper pulps.

As one of the world's major producers of this basic alkali, Wyandotte Chemicals Corporation is in a good position to meet your needs for Caustic Soda promptly and dependably. In addition, Wyandotte's experienced technical staff stands at your service. For information, simply call your nearest Wyandotte Representative.

**Wyandotte Chemicals Corporation**
Wyandotte, Mich. • *Offices in Principal Cities*

SODA ASH • CAUSTIC SODA
BICARBONATE OF SODA
CALCIUM CARBONATE • CHLORINE
HYDROGEN • DRY ICE
GLYCOLS • SYNTHETIC DETERGENTS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE
PROPYLENE DICHLORIDE • CHLOROETHERS
AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

Wyandotte
REG. U. S. PAT. OFF.

# Financial Record

| | Per Share Earnings | | | |
|---|---|---|---|---|
| | Calendar Year 1947 | Calendar Year 1948 | Indic. Annual Divid. Rate | April 26 Approx. Market Price |
| **Preferred Stocks** | | | | |
| Armstrong Cork Co. $3.75 Cum. | $3.64* | $4.33* | $3.75 | 95⅜ |
| Armstrong Cork Co. $4.00 Cum. Conv. | 3.64* | 4.33* | 4.00 | 106⅛ |
| Celotex Corp. 5% Cum. | 24.25c | 21.22g | 1.00 | 17⅛ |
| Champion Paper & Fibre $4.50 Cum. | 65.90f | 61.80j | 4.50 | 94¼ |
| Container Corp. of Amer. 4% Cum. | 102.74 | 104.24p | 4.00 | 96⅝ |
| Crown Zellerbach $4.20 Cum. | 56.40f | 63.54g | 4.20 | 97 |
| Crown Zellerbach $4.00 Cum. Conv. 2nd | 53.96f* | 60.21g* | 4.00 | 94½ |
| Dixie Cup Co. $2.50 Cum. Conv. Cla | 9.16 | 10.10 | 2.50 | 53 |
| Flintkote Co. $4 Cum. | 81.91 | 74.66p | 4.00 | 99⅜ |
| Robert Gair Co., Inc. 6% Cum. | 20.11 | 15.96p | 1.20 | 16 |
| International Paper Co. $4 Cum. | 236.51 | 263.00 | 4.00 | 96¼ |
| Johns-Manville $3.50 Cum. | 128.81 | 217.72p | 3.50 | 106 |
| Kimberly Clark Corp. 4½% Cum. | 70.03 | 80.74 | 4.50 | 103⅜ |
| Kimberly Clark Corp. 4% Cum. Conv. 2nd | 41.60* | 41.59* | 4.00 | 99 |
| MacAndrews & Forbes 6% Cum. | 62.20 | 62.23 | 6.00 | 137½ |
| Mead Corp. 4¼% Cum. | 81.56 | 73.46 | 4.25 | 73¼ |
| Mead Corp. 4% Cum. Conv. 2nd | 33.30* | 29.91* | 2.00 | 31¾ |
| Paraffine Cos. Inc. 4% Cum. Conv. | 152.76a | 156.11 | 4.00 | 104⅝ |
| Rayonier Inc. $2 Cum. | 13.58 | 16.43 | 2.00 | 30⅛ |
| St. Regis Paper Co. 4.40% 1st A | 76.93 | 68.10p | 4.40 | 85¼ |
| Scott Paper Co. $3.40 Cum. | 43.95 | 59.06 | 3.40 | 94½ |
| U. S. Gypsum Co. 7% Cum. | 211.34 | 314.45 | 7.00 | 182¼ |
| United Wallpaper Inc. 4% Cum. Conv. | (d)1.35a | (d)0.79 | 2.00 | 24 |
| West Virginia Pulp & Paper 4½% Cum. | 75.75c | 81.01g | 4.50 | 105½ |
| **Common Stocks** | | | | |
| AFW Products Co. | $1.24 | $0.73 | $0.25 | 3⅛ |
| American Writing Paper Corp. | 1.61 | (d)0.15 | 0.25 | 5½ |
| Armstrong Cork Co. | 6.41 | 7.54 | 3.00 | 41¼ |
| Celotex Corp. | 6.59c | 5.73g | 2.00 | 19⅝ |
| Certain-Teed Prods. Corp. | 3.75 | 4.02 | 1.15 | 11⅜ |
| Champion Paper & Fibre | 5.57f | 6.00j | 2.00 | 21⅝ |
| Congoleum Nairn Co. | 4.55 | 5.78 | 2.25 | 27½ |
| Container Corp. of America | 10.09 | 9.98p | 4.50 | 33⅞ |
| Crown Zellerbach | 6.81f | 7.26g | 2.00 | 23⅜ |
| Dixie Cup Co. | 5.87 | 6.70 | 1.00 | 28⅛ |
| Eastern Corp. | 5.02 | 4.76 | 1.00 | 11⅛ |
| Flintkote Co. | 6.27 | 5.13p | 2.50 | 23⅛ |
| Robert Gair Co., Inc. | 3.18 | 2.48p | 0.70 | 6⅛ |
| Great Northern Paper Co. | 4.56 | 4.63 | 2.80 | 35 |
| International Paper Co. | 15.02 | 16.73 | 5.00 | 48 |
| Johns-Manville Corp. | 3.17 | 5.42p | 2.00 | 34½ |
| Kimberly-Clark Corp. | 4.29 | 5.02 | 1.65 | 19⅝ |
| MacAndrews & Forbes Co. | 3.68 | 3.68 | 2.50 | 32 |
| Marathon Corp. | 3.39c | 4.08g | 1.40 | 20⅛ |
| Mead Corp. | 7.33 | 6.36 | 2.00 | 15¾ |
| National Container Corp. | 4.13 | 2.28 | 0.80 | 7⅛ |
| Paraffine Cos. Inc. | 2.40g | 2.45 | 1.20 | 17¾ |
| Rayonier, Inc. | 7.30 | 9.09 | 2.00 | 23½ |
| Ruberoid Co. | 9.89 | 11.80 | 3.25 | 41⅜ |
| St. Regis Paper Co. | 2.66 | 2.27p | 0.80 | 7⅝ |
| Scott Paper Co. | 3.02 | 4.15 | 2.50 | 51⅛ |
| Sutherland Paper Co. | 6.87 | 5.63 | 2.50 | 33 |
| Taggart Corp. | 1.29 | 1.08 | 0.60 | 10⅜ |
| Union Bag & Paper Corp. | 7.93 | 8.21p | 4.00 | 25⅜ |
| United Board & Carton | 4.95b | 0.73b | (e) | 5⅛ |
| U. S. Gypsum Co. | 10.00 | 15.04 | 6.00 | 98⅛ |
| United Wallpaper | (d)0.11a | (d)0.10 | (n) | 3⅝ |
| West Virginia Pulp & Paper | 11.40c | 11.51g | 4.00 | 36⅝ |

(a) Year ended 6/30/48
(b) Year ended 5/30/48
(c) Year ended 10/31/47
(d) Deficit
(e) Omitted dividend 2/4/49
(f) Year ended 4/30/48
(g) 12 months to approximately 1/31/49
(h) 12 months to 2/5/49
(j) 8 months to 12/31/48
(n) Last payment 25c, 9/16/47
(p) 12 months to approximately 3/31/49
(*) Earnings per combined preferred shares.

## Dividends Declared

*Marathon Corp.* on April 19 declared quarterly dividends on both its common and preferred stocks. The common dividend of 35 cents a share is payable May 31, to holders of record May 10; the preferred dividend of $1.25 a share is payable July 1, to holders of record June 20. Amounts of both dividends are net after provision for Wisconsin privilege dividend tax.

*St. Regis Paper Co.* on April 20 declared a regular quarterly dividend of 15 cents a share on its common stock, payable June 1 to holders of record May 4.

*Taggart Corp.*, on April 20 declared a dividend of 15 cents a share on its common stock, payable June 1 to holders of record May 4.

## Abitibi Plans

TORONTO, Ont.—Higher or even continued dividends on the common stock of Abitibi Power & Paper must depend upon the needs of the company for working capital, D. W. Ambridge, president, told the firm's annual stockholders' meeting here. Further improvement in the physical condition of the company's plants is still called for and in addition, he said, the cash position of the company should be improved after bank loans, now reduced to $500,000 have been paid off, he said.

Current earnings, Mr. Ambridge reported, were slightly lower than the rate shown in the annual report. This was the result of higher costs, increased rates of taxation and slightly lower sales. It is too early, he said, to give any indication as to what earnings for this year would be.

For the first time in many years the company found it necessary to reduce the prices of some of its products. Effective as of April 1, the price of unbleached sulphite pulp was cut by $7 a ton and a $5 reduction was made in the price of bleached pulp.

The sale of Kaministiquia Power Co. to Ontario Hydro has been completed and the receipt of the purchase price in the neighborhood of $5 million was a welcome addition to the working capital of the company, Mr. Ambridge reported. This property was carried on the company's books at $3.5 million, so there had been an improvement in the liquid position of the company.

The rehabilitation of the company's properties is proceeding in good order and most of the urgent work will be completed before the end of the year. Construction work at Iroquois Falls, however, will not be finished until 1950.

## Portfolio Slenderized

OTTAWA — A highlight of the 1948 annual report of the Commonwealth International Corp. is now shown to be a decrease in the proportion of portfolio holdings in pulp and paper investments compared with the preceding year.

Portfolio changes in 1948 showed the following in pulp and paper holdings, with 1947 figures of the number of shares in brackets: Great Lakes Paper, 2,000 (nil); Bathurst Pulp and Paper A., nil (2,700); Donnacona Paper, nil (1,500); International Paper, 2,500 (1,500); Minnesota & Ontario Paper, 1,500 (nil); Power River, 3,500 (2,500); Price Bros., 1,000 (2,000).

## THERE IS A

# BETTER WAY

## TO GRIND PRESS ROLLS

**When a felt** passes through the nip it adjusts itself to every curve and irregularity in the press rolls. If the rolls are uneven, the pressure will be uneven, too; more water will be squeezed from the high places than from the low places; felt life will be shortened and drying time will be increased.

**Hamilton Felts** will not grind your rolls for you, but, from the thinnest tissue to the heaviest board, there is a Hamilton Felt that will dry your sheets better, faster and at lower cost.

**SHULER & BENNINGHOFEN, HAMILTON, OHIO**

• Miami Woolen Mills •

# Hamilton Felts

• Established 1858 •

# Army-Navy

N. Y. Purch. Office

## Army Invitations to Bid

QM-30-280-49-1150—TAPE, adhesive, Cellulose Acetate, ½" x 0.005", Red, 30 feet per roll—1,725 rolls.

Bids will be opened 27 April 1949 at 1 PM (EST) at the New York office. Delivery: bidder to indicate best possible delivery date. This procurement is for the U. S. Army (Signal Corps).

QM-30-280-49-1151—TOWELS, Paper, Single fold, 250 sheets per package—270,000 pkgs.

Bids will be opened 28 April 1949 at 1 PM (EST) at the New York office. Delivery: to be completed during August 1949. This procurement is for the National Guard.

## Army Awards Made

Nine (9) awards have been made.

QM-30-280-49-983 covering duplicator, mimeograph, and typewriter paper, to:

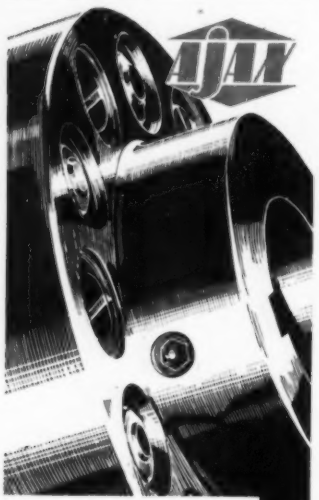
Oregon Pulp & Paper Co., Portland 5, Ore., typewriter—3,000 reams @ $1.74.

Dexter Sulphite Pulp & Paper, Dexter, Jefferson Co., New York, typewriter, manifold—Sub-9-green—6,500 reams @ $.34744. Typewriter, manifold—pink—8,600 reams @ $.34744.

Boston Paper Board Co., Boston, Mass., duplicator, 8 x 13½—3,500 reams @ $.7443 to $.912. Duplicator, 13 x 16—680 reams @ $1.44 to $1.77. Typewriter, 16 x 21—1,480 reams @ $1.73.

Mead Sales Co., Inc., New York City 17, paper, duplicator—sub-24-white—6,250 reams from: $.94 to $1.14.

Grays Harbor Pulp & Paper Co., Hoquiam, Washington, paper, TW—sub-16-white—1,700 reams @ $1.64.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**AJAX FLEXIBLE COUPLING CO. INC.**

**19 English St.**
**WESTFIELD, NEW YORK**


Buckley, Dunton & Co., Inc., New York City, various paper, various sizes—100,470 reams from: $.447 to $1.776.

Champion Paper & Fibre Co., Hamilton, Ohio, mimeograph paper, 8½ x 10½—3,850 reams @ $.4076. Mimeograph paper, 8 x 10½—1,670 reams @ $.4534 to $.4983. Typewriter Paper, 16 x 21—from: $1.6138 to $1.6167.

Walker Goulard Plehm Co., Inc., New York City, duplicator paper—Canary and pink—19,150 reams from: $.7368 to $.87. Typewriter paper, manifold, sulphite sub-9, Green 8 x 10½—2,400 reams @ $.3409.

Birmingham & Prosser Co., New York City, Paper, mimeograph, wood pulp, chem. sub-16, white 8½ x 10½—14,850 reams from: $.387 to $.428. Same as above, white, 8 x 10½—106,250 reams from: $.432 to $.48.

Six (6) awards have been made on: QM-30-280-49-999 covering PAPER, Teletype Machine; and FILE FOLDERS, Manila, to:

Warshaw Mfg. Co., Brooklyn, N. Y., files, manila, vertical, flat type, plain bottom, heavy ⅓ cut, 9½ x 11¾—3,150,000 each from: $.00864 to .00933. Same as above—sqre cut, 9½ x 11¾—1,680,000 each from: $.00859 to $.00928. Same as above—sqr cut, 9½ x 14¾—1,500,000 each from: $.01042 to $.01275.

James F. Walsh Paper Co., New York City, same as above—⅓ cut, 9½ x 11¾—90,000 each @ $10.90 M. Same as above—sqr cut, 9½ x 11¾ @ $10.90 M.

Ennis Tag & Salesbook Co., Ennis, Texas, same as above—⅓ cut, 9½ x 11¾—630,000 each @ $.0099. Same as above—sqr cut, 9½ x 11¾—280,000 each @ $.0099.

Prime Paper Corp., New York City, same as above—⅓ cut, 9½ x 11¾—630,000 each @ $.0093.

Moore Business Forms, Inc., Niagara Falls, N. Y., paper, teletype machine, white, perforated sides, 4-part, size 8½ x 5½—2,500,000 sets @ $8.83 M.

Autographic Register Co., Hoboken, N. J., same as above—5 pt—300,000 sets—$11.61M. Same as above 6 pt—500,000 sets—$13.71 M.

Four (4) awards have been made on: QM-30-280-49-1050 covering FOLDERS, file, manila, vertical, flat type, plain bottom, heavy—various sizes, to:

Warshaw Mfg. Co., Brooklyn, N. Y.—5,179,000 each from: $.009 to $.0124.

Ennis Tag Salesbook Co., Ennis, Texas—211,000 each @ $.0107.

James F. Walsh Paper Corp., New York City—2,220,000 each from: $9.64 to $10.19 M.

Majestic File Folder Corp., New York City—8,641,000 each from: $7.90 to $9.47 M.

Directive quantity was 17,150,000 each. This procurement is for the U. S. Army.

## Army Bids Received

Fifteen (15) bids have been received on the following item:

QM-30-280-49-1088—BLACKBOARDS, 4' x 6', unframed:

Directive quantity: 18,018 each; total quantity of bids received: 184,662 each. Price range: $4.32 to $10.79 each.

This procurement is for Government and Relief in Occupied areas (Pyuku-s).

Fourteen (14) bids have been received on: QM-30-280-49-1094 covering PAPER ITEMS, as follows:

Paper, mimeograph, various colors and sizes—11,190,980 rms from: $.426 to $.66.

Paper, typewriter, bond, various sizes and colors—3,643,800 rms from: $.3817 to $.66.

This procurement is for the U. S. Army.

Seventy-two (72) bids have been received on: QM-30-280-49-1048 covering cushioning material, tags, and barrier material:

Directive quantities: Tape—4,500 rolls. Tags—various quantities. Barrier and cushioning mat'l—various quantities.

Total quantity on all bids received:

Cushioning material, paper, waxed shredded—710,000 lbs. from: $38.94 per ton to: $.14¼ lb.

Cushioning Mat'l, wadding, cellulose—24,000 rls from: $12.10 to $73.10 per rl.

Barrier Mat'l, various sizes—35,050 rls from: $7.36 to: $24.12 rl.

Bags, Interior—2,919,000 each from: $.0267 to $.059.

Tape, paper, kraft—641,000 rolls from: $.3593 to $.807 per rl.

Tags, shipping, white, various sizes—24,121,000 each from: $5.09 per M to $12.37 M.

Paper, wrapping, kraft—24,000 rls from $6.83 cwt to $.1225 per lb. This procurement is for the U. S. Army.

Ten (10) bids have been received on: QM-30-280-49-1090 covering board binders, paper—map and sulphite.

Total bids received: paper, white—1,700 reams; price range: from: $5.42 to $6.98; paper, map, various sizes—10,640 reams from: $12.00 to $17.32. NOTE: No coverage on Board Binders. This procurement is for the U. S. Army.

Fourteen (14) bids have also been received on: QM-30-280-49-1108 covering barrier, material—waterproof. Directive quantity: 1890 rolls. Total bids received: 18,910 rolls from: $8.00 to $28.80 per roll. This procurement is for the U. S. Army (Signal Corps).

## Navy Invitation to Bid

Inv. No. 4564—covering PAPER, various—7,600 reams. Bids will be opened 19 April 1949 at the New York office. Delivery: May and August 1949 to various destinations.

Inv. No. 4489—PAPER, various—141,670 reams. Bids will be opened 3 May 1949 at the New York office. Delivery: June 1949 to various destinations.

Inv. No. 4528—PAPER, duplicating, combination sets—8170 boxes. Bids will be opened 4 May 1949 at the New York office. Delivery: May 1949 to various destinations.

Inv. No. 4522—Pads, drawing paper—8,200 each. Printing and tracing papers—6,550 rolls. Drawing paper—5,000. Bids will be opened 5 May 1949 at the New York office. Delivery: various destinations during June 1949.

Inv. No. 4523—Paper (duplicator) 5,300 reams. Bids will be opened 5 May 1949 at the New York office. Delivery: during June 1949 to various destinations.

Inv. No. 4506—Folders, File—152,400 sets. Folders, wallet type and visible follow-up—337,000 each. Bids will be opened 5 May 1949 at the New York office. Delivery—bulk during June, balance during August.

Inv. No. 4569—Paper, kraft—105,400 lbs. Bids will be opened 12 May 1949 at the New York office. Delivery: during June to various destinations.

Inv. No. 4599—Fiberboard, water resistant (60 x 80). Bids will be opened 12 May 1949 at the New York office. Delivery: during June to various destinations.

Inv. No. 4513—Index Paper, 1,033,400 sheets. Bids will be opened 5 May 1949 at the New York office.

## On Dumping List

OTTAWA—Regulations which exempt certain goods from the special or dumping duty provided by the Customs Tariff in Canada have been amended by adding soda ash to the list of goods exempted from special or dumping duty, according to an announcement by the Department of National Revenue, Canadian Government, to all Collectors of Customs and Excise.

## New Tympan Quarters

EAST ORANGE, N.J.—The Tympan Paper Co., has removed its offices to 3 North Arlington avenue. Telephone, ORange 5-8040.

# *Bleach Liquor Prepared in 30 Minutes...*

Preparing bleach liquor by introducing chlorine into excess milk of lime and waiting for it to settle is a time consuming process. In addition, it entails an expensive outlay for settling tanks and large storage facilities, the inconvenience of waiting and of sludge washing to say nothing of high labor costs. Nor can clear bleach liquor be used to buffer the bleaching operating beyond the solubility of lime.

These weaknesses in the preparation of bleach liquor were of concern to Hooker Technicians who realized that economies in pulp and paper production help Hooker as well as the industry. After a thorough investigation, Hooker Technicians, working with the pulp and paper industry, showed how a bleach liquor could be prepared so as to be used without settling and with resulting economies in equipment, labor and time. The key to this process is a low cost but efficient screen for the removal of all but the finest of the insoluble particles of lime before chlorination. Also important to the process is the agitation of the lime during chlorination and storage.

Coincidentally with the development of this process and its equipment, Hooker Technicians suggested the use of this same type of screen for introducing clean lime for "liming" in the chlorination stage.

● Hooker Bulletins 201 and 242 are devoted to a discussion of the production and use of unsettled bleach liquor and the equipment for this process. They are available when requested on your company letterhead.

**HOOKER ELECTROCHEMICAL COMPANY**
**6 UNION STREET • NIAGARA FALLS, N. Y.**
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**HOOKER CHEMICALS**

7-377 **Caustic Soda Muriatic Acid Sodium Sulfide Paradichlorobenzene Chlorine Sodium Sulfhydrate**

## World Pulp Problems

*(Continued from page 9)*

of letting their people loosen the belt by a notch or two. I am therefore confident that the time is approaching when the countries that have to import pulp and paper will be able to increase their purchases with the result that newspapers and other users of pulp products will gradually regain more normal working facilities. In other words, I believe the end of the acute newsprint shortage in Europe is gradually coming into sight.

### Long-Term Outlook

Even more important to my mind than the short-term situation, however, is the long-term outlook for pulp production and consumption. Per caput pulp consumption shows great difference between countries. Almost 90 percent of all the wood pulp is consumed at present in North America and Europe by some 500 million people. North American consumption is well over 100 kilos a person compared to the European average of roughly 20 kilos. But what about the remaining 1,500 million people in Latin America, the Far East, the Soviet Union and Africa with an average consumption ranging around 5 kilos?

During my visit to the Far East I was able to see what such low consumption figures really mean. I visited many rural settlements in that area and was impressed by the apparent absence of newspapers or periodicals and the alarming rate of illiteracy.

All this is nothing new, but that is no reason why it should be allowed to last. As long as hundreds of millions of people are practically deprived of the advantages that come from a reasonable paper and pulp consumption there can be no more pulp surplus in the world than we can admit talk of a food surplus when millions starve or are unable to get the food they need for reasonable health.

These generalities will not help sell many tons of pulp nor are they a sufficient basis for bankers and industrialists to venture millions of dollars for building new pulp mills. Indeed, I have been reminded that predictions about extraordinary increases in the paper consumption of Latin America, China and India have been made for a long time and that results have again and again fallen short of even the most cautious expectations.

### Pulp A Young Industry

But let me remind you that we are dealing with a rather young industry and that the past 50 fifty years, which have seen the spectacular rise of a big pulp industry, have been disturbed by certain difficulties which we hope to avoid in the future.

Let me remind you that this Conference can base its deliberations on two important facts which ten years ago did not exist. The first is technical progress in the manufacture of pulp.

Even more important is my second fact, namely, the growing recognition of the need to achieve a betterment in the living conditions of 1,500 million underprivileged human beings a betterment which is technically possible and politically imperative.

### Challenging Task

I regard it as one of the most challenging tasks before your Conference to explore the practical possibilities of achieving a rapid expansion of wood pulp consumption in all its forms.

In the light of the conclusions from this discussion you will have to determine whether present pulp capacity is sufficient to cover prospective world needs. If the answer is in the negative, I hope you will also be able to indicate in your report how much new capacity is needed, by when, in what grades and in which regions. Pulp is a world commodity, but I advise you to consider *region by region* before taking up matters on the world level.

### Politico-Economic Restrictions

In looking for the two answers just mentioned you will have to examine a lot more problems than the simple statistical facts which strike a layman like me. They deal with all the political and economic restrictions which today hamper the production of pulp, like that of many other commodities, and which hold back the necessary expansion of international trade. Moreover, what guarantees are needed to induce investors to establish new pulp mills at home and abroad? What provisions are necessary to give producers and exporters a reasonable prospect of stable markets? What could be done to eliminate the disturbing effect of artificial exchange rates on the international price level for pulp?

### Production—Distribution Pattern

Still more important is the question as to the most efficient pattern for the production and distribution of paper and other pulp products. Should pulpwood be shipped over great distances and converted into paper at consuming cents? Or on the contrary, should mills be established close to their raw material base and convert wood into pulp for a world-wide distribution? Or finally, should primary producers go even one step further and extend the manufacturing process right to the making of newsprint, paper board and other finished products in line with the general policy of most countries to process their own raw materials and export finished products?

These questions are not confined to pulp, nor is it possible to give an answer that can claim general validity. But before deciding on the location of new pulpmills, it appears desirable to have an idea about the ideal pattern at which we are aiming.

Right now five countries produce over 90 percent of the pulp which is consumed at varying degrees all over the world. Should this centralization of production in a small number of countries, be maintained or is it possible and desirable for pulp industries to be more evenly distributed over all parts of the world. Finally, how can all these developments be planned without further increasing the shortage of dollars and so-called other "hard currencies" but on the contrary, help to relieve this situation?

All these questions,—and undoubtedly many others as well—, will have to be answered with due consideration for the most fundamental of all, which is *the need for a proper relation between the capacity of pulp industries and the permanent availability of pulpwood in the necessary quantity and quality.* We certainly agree that no pulp mill should be built without being assured of a regular supply of raw materials from nearby sources.

Mr. Bevin a few days ago predicted a newspaper crisis within the next 10 years, especially in view of the excessive size of American newspapers. He said, "The world is using up too much news print and exhausting raw material supplies. Unless a synthetic form of newsprint is developed the crisis is inevitable."

I don't share Mr. Bevin's pessimism because I am told by FAO's Forestry experts that there is still plenty of wood in the world to support even a very substantial expansion of wood pulp consumption, but I do believe that the time has come when we must make very sure that new pulpmills do not lead to the destruction of forest resources, but contribute on the contrary to better forest management and utilization.

### Planning Ahead Indispensable

By now, I feel sure that many of my listeners are asking themselves: are we here to draw up a big blueprint of the future and is FAO an advocate of planned economy? My answer to this is neither "yes" nor "no," because I do not believe in the validity of such general slogans. In the particular case of woodpulp, however, I feel very strongly that there has been and will always need to be considerable planning ahead which is indispensable simply because it takes from three to five years from the time a pulp mill is proposed until the first pulp or sheets roll off the machines. Before projecting a new mill it becomes inevitable to assess what the markets and the production costs are likely to be five years hence.

This is all the more necessary since a modern pulp mill is a venture of a size which warrants the greatest care. There might be certain activities where one can expand or contract on a hit-or-miss basis, but no responsible industrialist or government should undertake the building of a pulp mill which costs from ten million dollars upward without trying to look thoroughly into the future. Such an undertaking can be particularly facilitated if experts from all countries that produce and consume pulp sit together as you here, to pool their knowledge and replace guesswork and personal assumptions by knowledge of what is happening in each of their countries.

### Summary

I have attempted to give you this short review of the present situation and its problems because I wanted you to know what FAO had in mind in bringing you together. Let me sum up now by three statements about the way in which I conceive your role and that of FAO in connection with this Conference:

*(1) FAO has assumed full responsibility for initiating, organizing and preparing this Conference with the help, of course, of our Canadian friends and many experts in other countries. From now on, however, responsibility passes from FAO to the delegates here assembled.*

*FAO's staff is here to service the Conference and to help the Chairman and delegates in making the Conference run smoothly. But it is your responsibility to adopt an agenda, to discuss the various points it contains and to then decide what action you wish to take with regard to each of them and in particular, whether you wish to make any formal recommendation to governments and what these recommendations should be.*

*(2) I have been asked several times whether it is the purpose of this Conference to reach or prepare a commodity agreement on pulp. Speaking for FAO, my answer is a definite "No." In our opinion, commodity arrangements are a very complicated affair which at times may be necessary and useful, but which should be confined to those cases where there is a need for international agreements on production quotas, international allocations and the like.*

*We do not believe that there is need for an international pulp agreement. You are in the happy position of a gradually expanding industry which can derive considerable benefit from international consultation and which needs some regional and world-wide planning, but beyond that I believe the maximum freedom should be left to the initiative of individual industries and countries.*

*(3) The practical problems before this Conference strike me as so exciting that I wish I could stay with you for the full duration of it. Unfortunately this will not be possible. Permit me therefore to tell you now that it is FAO's hope that you will be able to discuss all the issues with which you are faced and to translate the results of these discussions into clear recommendations and conclusions.*

### Incidental Problems

Many problems connected with wood pulp are highly controversial. I can think myself of quite a few with regard to which the views of some governments here represented might be very different and perhaps even opposed to others. Let this be no reason for eliminating such issues; their existence is the principal justification for having called you together.

There is today much criticism of the great number of international conferences and about the cost and time connected with their attend-

*(Continued on page 44)*

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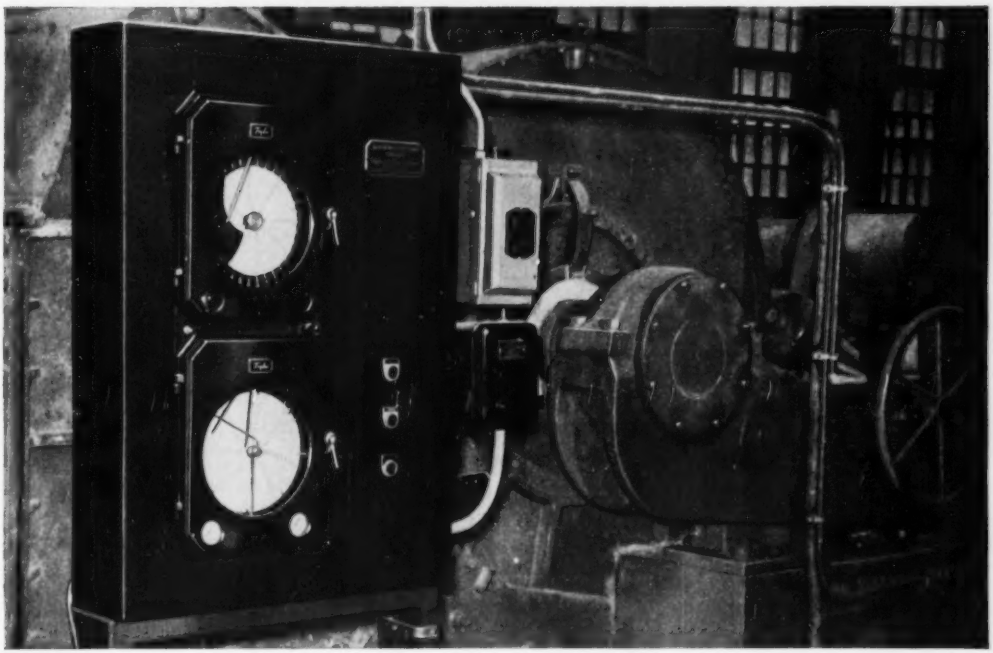

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"We now depend entirely on your instruments for proper control of our beaters."

Whether you use Beater Roll Pressure Control or a simple recorder, Taylor's principle of beater roll pressure measurement is time proven, simple and dependable. Another of the many ways we can help you keep quality up and costs down. Ask your Taylor Field Engineer or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

*Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

**TAYLOR INSTRUMENTS MEAN ACCURACY FIRST**

## World Pulp Problems

*(Continued from page 42)*

ance. I am fully conscious of this criticism, and I can say that I am one of those who frequently share it. The only answer is that each conference should do a real job of work, face the issues squarely, and never permit a question to be eliminated because some government may feel hesitant to discuss it.

One of the many encouraging aspects about this Conference is that it raises no problems of big international politics. It is a technical meeting of people connected with a very important aspect of economic development and human welfare. While some of the issues involved might seem delicate to you, none of them, as I see them, is so delicate that it wouldn't lend itself to free international discussion.

### Facts Needed

The report to be produced by this Conference should be full of facts, conclusions and recommendations that will help you in your own field and that will help your governments and the people of the world in inching forward a step toward greater prosperity, better business and better forest management.

I hope this report and the recommendations to governments which it will contain will become an historic document in more than one sense. This is the first world pulp conference at which outstanding representatives of all nations having a major interest as producers and consumers meet to discuss their common problems. I do not think, however, it is the last one, and it shouldn't be. In the ten days at your disposal you will be able to explore and perhaps be fortunate enough to solve a great many important issues. But you can't deal with everything and in many cases, you will have achieved a great deal if you can agree on the methods to be applied toward the solution of certain problems and on the general policies which each of you should pursue during the coming weeks and months. This effort will lead somewhere only if it is systematically pursued. No matter what form you give to your recommendations, they will mean very little unless we all understand that the real work begins after the Conference when we will all have to do something about giving effect to the things we all agree about.

### Future Cooperation

This future cooperation can take many different forms, and I don't want to influence you by suggesting how it should be organized. But there is one last point I want to stress. Among the government delegations assembled in this room I notice a large number of men who in their normal lives are not civil servants but the industrialists and businessmen responsible for production of wood pulp or paper and for its trade. This association of business and government is one of the most hopeful forms of international cooperation and action. I hope it will remain the outstanding characteristic of our future efforts as well.

I now declare open the Preparatory Conference on World Pulp Problems.

Present at the opening, and seated at the right of Mr. Dodd, was Dr. Hugh Keenleyside, Deputy Minister of Mines and Resources and Commissioner of the Northwest Territories.

In welcoming the delegates on behalf of the government and people of Canada, Dr. Keenleyside said this was a significant occasion, not only because it was the first world pulp conference but because today was the fourth anniversary of the first meeting of the United Nations at San Francisco.

"I am sure," he said, "that I will not be misunderstood when I say that the skepticism with regard to international conferences mentioned by the director-general is fully shared by the Canadian government. The government feels that the number of conferences in recent years is putting a severe burden on governments, which should be carefully examined.

"The Canadian government, however, does not feel that way about this meeting because it has a very special interest in F.A.O., which had its beginnings at Quebec City in 1945, and because of the importance to Canada of the matters coming under F.A.O., particularly with relation to wood pulp which forms important segment of our economy, accounting for hundreds of millions of dollars per year."

"One of the many encouraging aspects of this conference, Mr. Dodds said, is that it raises no problem of big international politics. It is a technical meeting of people connected with the very important aspect of economic development and human welfare. While some of the issues involved might seem delicate to you, none of them, as I see them, is so delicate that it would not lend itself to free international discussion."

Delegations include Australia, Austria, Canada, Chile, Denmark, Finland, France, Greece, India, Italy, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom and the United States of America.

Observers are expected from: Argentina, Belgium, Bolivia, Czechoslovakia, Ecuador, Germany (French Zone and Bizone), Guatemala, Haiti, Japan, Turkey and Yugoslavia

United Nations Educational Scientific and Cultural Organization has sent observers, as well as the International Labor Office and an observer will represent the Supreme Command for the Allied Powers in Japan.

With Mr. Glesinger translating all speeches and remarks into French or English, the two working languages of the conference, delegates then heard a brief welcoming address from Mr. Fowler and from Dr. G. H. S. Barton, special assistant to the Canadian Minister of Agriculture and chairman of the Canadian F.A.O. committee.

The conference named first vice-chairman M. du Vinaux, inspector general Water and Forests, Department of Agriculture, of France, and chairman of the French delegation. Second vice-chairman was Hon. S. F. Skinner, commissioner of State Forests of New Zealand, and head of the New Zealand delegation.

Following his election as chairman, Mr. Fowler stressed the preparatory nature of the conference and urged a minimum of formality and maximum of getting down to the real issues. The conference then adopted its rules of procedure and adjourned for lunch.

The Canadian delegation is headed by D. A. Macdonald, Dominion Forester, Department of Mines and Resources, Ottawa, and includes N. R. Chappell, Ottawa; R. M. Fowler, J. R. S. McLernon and F. G. Robertson, all of Montreal.

Downing Brown of the Brown Co., L. K. Larson of the pulp division of the Weyerhaeuser Timber Co., and E. W. Tinker, executive secretary of the American Pulp & Paper Ass'n., conferred with the Canadian delegation in Montreal on April 23, and with the American delegation on the following day, regarding the agenda for the meeting and the presentations to be made.

**D. M. FINLEY**

**—chief accountant of Bemis Bro. Bag Co., St. Louis, has been elected assistant secretary of the company. . . With the Bemis since 1937, he is a CPA and a member of the American Institute of Accountants, the Controllers Institute of America and the Tax Executives Institute.**

## Foremen's & Exec's Club

GLENS FALLS—Kenneth Miller of the Marinette Paper Co. in South Glens Falls has been elected president of the Foremen's and Executives' Club of Glens Falls, succeeding James K. Cotter of the M. Ames Chemical Works. Kenneth Simpson of the Union Bag & Paper Corp., Hudson Falls, was elected vice-president.

## Ellis Joins Rushmore

NATURAL DAM, N.Y.—James R. Ellis has been named superintendent of the Rushmore Paper Mills, here. Previously he was assistant superintendent of the Groveton Paper Co., Groveton, N.H.

## Schilling Re-elected

HARTFORD, Conn.—J. T. Schilling of the American Paper Goods Co., was re-elected treasurer of the Hartford Ass'n. of Credit Men on April 20.

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# Set Fall Meetings of Supt's.

NEW YORK—Thee New York-Canadian Division and the Southeastern Division of The American Pulp & Paper Mill Superintendents Ass'n., Inc., individually have established meeting dates and places of meeting for their respective fall meetings this year as follows:

New York-Canadian Division, September 8-10; Champlain hotel, Bluff Point, Plattsburgh, N.Y.

Southeastern Division, October 14-15, Hotel Roanoke, Roanoke, Va.

J. O. Julson of B-F-D Division of the Diamond Match Co., Plattsburgh, N.Y., as chairman of the New York-Canadian Division, made the announcement for its meetings; C. B. Curry of the National Container Corp., of Virginia, Big Island, Va., as secretary-treasurer of the Southeastern Division, for its meeting.

## Can. Newsprint Outlook

OTTAWA—Judging from the results obtained in the first quarter of 1949, when Canada's production of newsprint reached an estimated close to 1.2 million tons or 6.4 percent more than in the same period last year, there is a distinct possibility now that Canadian output of newsprint during the present year may exceed earlier expectations or predictions of 4.8 million tons, particularly in view of improved production facilities in some mills where additional newsprint machines or speeding up of present machines are beginning to show in production figures for 1949.

In addition, the union of Newfoundland with Canada means that in future its production figures will be added to the over-all Canadian total and this will bring another estimated approximately 400,000 tons to the 1949 output of newsprint, with the production in Newfoundland during the first quarter of this year having already shown signs of increasing output at 109,232 tons or about one-third higher.

In the first quarter of 1949 Canadian shipments of newsprint overseas also advanced to a total of 83,879 tons or 6,791 tons more than in the same period last year and shipments to the United States in this period of 1949 moved up by 48,096 tons.

## Veteran Feted

YORK, Pa. — Harry E. Gentzler was honored by fellow employes of the Schmidt & Ault Paper Co. at a dinner at the Yorktowne Hotel, April 10, on the 50th anniversary of his employment with the firm.

More than 300 coworkers and friends attended the affair to honor 71-year-old Mr. Gentzler, who was a school teacher before starting work for the paper firm on April 11, 1899. The company presented him with a console model radio, lounge chair, floor lamp and smoking table.

Harry R. Peeling, assistant machine room foreman, acting for the employes, presented Mr. Gentzler with an inscribed gold watch and knife, chain and emblem bearing the insignia of the Knights of Malta. Mervin A. Wilhelm, production manager, served as toastmaster. Fellow employes provided vocal and instrumental entertainment.

Henry D. Schmidt, president of the company, praised Mr. Gentzler's long service and the high regard in which he is held both by management and workers.

Although ending 50 years of service with the firm, Mr. Gentzler has no thought of retiring.

Mrs. Gentzler shared honors at the speakers' table with her husband. The invocation was by Charles H. Egge, foreman of the storeroom. Harry R. Serf, assistant treasurer, presented the company's awards.

Featured on the entertainment program were Sterling H. Wert, Joseph Washington, Joseph Handy, James S. Crawford, and Rudolph Gillespie.

## Old Timers' Meet

CANTON, Ohio — Reuben B. Robertson, president of the Champion Paper & Fibre Co., was host to 436 members of the Champion Junior Old Timers Club at the annual banquet and entertainment program in ChampionYMCA, April 2.

The Junior Old Timers Club includes Champion employes who have between 20 and 25 years of continuous service to their credit.

The following 86 Champions become eligible for membership in the club this year:

Pearson M. Baines, Weaver M. Barrett, M. Dawson Beck, William Bramlett, John C. Bryant, Clarence Buchanan, William S. Bumgarner, William K. Burns, Robert S. Campbell, John G. Carver, Jack Chambers, Lewis J. Chambers, Ira D. Clark, James Clark, William Cody, Carroll Cook, William Cook, Robert Corzine, Coleman Davidson, Fred Dayton, Van Deaver, Cash Edwards, Norman E. Ferguson, Charley C. Fish and Grover C. Fowler.

E. Worley Free, James L. Freeman, R. Goodson, Charles G. Hall, Forest G. Hardin, Ogden G. Henson, Malcolm Inman, Herman D. Israel, Andrew J. Jackson Jr., Will L. King, James Liford, Hugh Liner, Jim M. Love, C. Tate Mason, Guy McCracken, Swan McCreary, Dock McElrath, Horace C. Medford, W. B. Medford, William S. Medlin, Marion A. Metcalf, Clarence Mills, Joseph Moore, Theodore Murry, Claud W. Paxton, W. H. Pressley and Lucius V. Putnam.

Eldridge L. Robinson, Haynes Rogers, Robert Rowe, Arthur Scroggs, Henry Seaman, Roy D. Seay, James R. Sechrest, Bruce F. Sellars, John L. Shipman, Vinson W. Shipman, Harley Shular, Dennis Singleton, Joseph F. Smathers, Theodore D. Stevenson, George G. Swafford, David Vance, Frank W. Vetoe, Jr., William H. Ward, Raymond F. Wells, Ralph P. Wiggins, George F. Worley, Ralph Worley, Robert H. Worley and Thomas L. Wright.

Harold Hansen, Rufus M. Medford, A. J. Sumner, James F. Thompson, Fred J. Stepp, Alney B. Robinson, Charles R. Henderson, C. E. Mainous, J. E. Palmer and Fred T. Peden.

## ODT Order Revisions

NEW YORK — The Office of Defense Transportation has announced that General Order 18A – Revised, covering the heavy loading of carload freight, which is now under suspension, was further suspended from 11:59 o'clock, P.M., April 16, until 11:59 o'clock, P.M., June 30, or until such earlier time as the ODT may hereafter designate, E. W. Tinker of the American Pulp & Paper Ass'n. has bulletined his membership.

ODT has also ordered that General Order 18A – Revised shall be revoked, effective 11:59 o'clock, P.M., June 30 (on which date the ODT is scheduled to terminate), as indicated below, Mr. Tinker added:

"(General Order ODT, 18A Rev., Suspension and Revocation)

Part 500—Conservation of Rail Equipment

Carload Freight Traffic

"Pursuant to Title III of the Second War Powers Act, 1942, as amended, Executive Order 8989, as amended, Executive Order 9729, as amended, and Executive Order 9919, It is hereby ordered, That all provisions of General Order ODT 18A, Revised, as amended, § 500.70 through 500.79, and all provisions of outstanding special directions and permits issued in connection therewith, shall be, and they are hereby, suspended from 11:59 o'clock p.m., April 16, 1949, until 11:59 o'clock p.m., June 30, 1949, or until such earlier time as the Office of Defense Transportation may hereafter designate.

"It is hereby further ordered, That General Order ODT 18A, Revised, as amended, and all outstanding special directions and permits issued in connection therewith, shall be, and they are hereby, revoked effective at 11:59 o'clock p.m., June 30, 1949.

"Issued at Washington, D.C., this 5th day of April 1949. — J. M. Johnson, Director, Office of Defense Transportation."

## N. Z. Industry Plans

WELLINGTON, N. Z.—The New Zealand Government has decided to establish a large scale pulp and paper industry, mainly for producing newsprint, near Whakatane in the north island.

## Trackeno Retires

FORT EDWARD, N. Y. — Louis Trackeno retired April 1 from the International Paper Co. mill at Palmer, N. Y., after having been employed by that firm for 31 years.

## Crepe-Kraft to Camden

CAMDEN, N. J. — The Crepe-Kraft division of National Waterproof Papers, Inc., has been moved here from Newark, N. J.

# SALES and INLETS *are tied together*

Your Sales Manager is re-shouldering his old responsibilities. SALES! That means that the spotlight again turns on QUALITY—because quality is the master key to sales. You'll be acting in the best interest of your sales department to investigate the advantages of "Inlet and Headbox by Valley."

**VALLEY IRON WORKS COMPANY • Appleton, Wis.**

*On more and more new paper machines it's INLET and HEADBOX*

*by* **VALLEY**

**FORMATION** | **CALIPER** | **LEVEL SHEET** | **INCREASED SPEED** | **HIGHER TEST**

## Record Can. Newsprint Out

OTTAWA — Canadian newsprint production in March was at an all-time peak of 415,792 tons, an increase of 28,120 tons over the similar month last year, the Newsprint Ass'n. of Canada reports, with the Canadian shipments in March amounting to 388,148 tons, an increase of 7,416 tons over March a year ago. Production exceeded shipments by 27,644 tons.

Newfoundland's March production figure was 39,986 tons, the highest ever recorded, and was 11,476 tons more than in the corresponding month last year. Shipments to the United States were almost double those of March, 1948, at 25,590 from 15,698 tons.

## EXPORTS, Not Imports

The headline on page 58 in the April 7 issue should have read "Canadian Exports," etc., rather than "Canadian Imports," etc., and the sixth word in the article itself should have read "exports," not "imports." We are grateful to V. L. Tipka, engineer of the Newsprint Service Bureau, for calling this inadvertance to attention. Please, whenever you spot an error in *Paper Trade Journal*, let us know, promptly. Accuracy is a cardinal virtue in business paper editing.—*Editor.*

## Blessing Bag Maker

SAN FRANCISCO—The United Engineering Co., 500 Beale street, has in production of the Blessing bag-maker, a new machine designed to save both paper and time on the part of clothing dry cleaners and manufacturers.

The operator of the machine draws a paper envelope over the garment to exactly required length, the machine cuts, folds and seals the wrapper across the top and the neatly wrapped garment is ready to be lifted from the machine.

## Newsprint Imports Decline

WASHINGTON — Newsprint imports fell off in February in both volume and value compared with January, based on preliminary figures of the Department of Commerce.

Imports dropped to 720,000,000 pounds valued at $34,200,000 from 738,000,000 pounds, valued at $35,400,000 in January, the figures indicated.

Wood pulp imports rose to 141,000 tons, valued at $19,100,000 in February, compared with 127,000 tons, valued at $15,200,000 in January.

## Watertown Sec. TAPPI

WATERTOWN, N. Y.—Elmer Godfrey, superintendent of the Dexter Sulphite Pulp & Paper Co., was reelected chairman of the Watertown section of TAPPI at the annual dinner meeting held at Glen Park on April 14. Harold Spector, chemical assistant at the Watertown plant of the Taggart Corp., was elected vice-president; John H. Treadwell, vice-president of the Treadwell Supply Co., Inc., of this city, was reelected secretary-treasurer.

## Maine Dam Contract

AUGUSTA, Me. — Contracts totalling $670,636 for construction of the Central Maine Power Co., new dam and bridge at Long Falls on the dead river were awarded on April 13.

Wyman & Simpson, Inc., of Augusta got a $631,889 contract for building the dam.

Ellis S. Snodgrass, Portland, will build the bridge below the dam for $38,747.

The power company will supply materials for both projects, raising their total cost to about $1,080,000.

The dam will create a lake 23 miles long, impounding 12 billion cubic feet of water. This will add one third to existing water storage on the Kennebec river and its tributaries.

## Fund Approval Asked

NORTH ADAMS, Mass.—Paper manufacturers in the Berkshires were informed on April 16 that the Senate Appropriations Committee in Washington has been asked to approve federal funds to begin the Hoosac River flood control project here and in Adams.

The request was made by Senator Lodge (R-Mass.). In a letter to Chairman McKeller (D-Tenn.), Senator Lodge said: "The Commonwealth of Massachusetts has already appropriated $2,000,000 to repair the damage. I cannot stress too strongly the urgent need for federal appropriations to provide for initial measures for adequate protection against a recurrence of similar damage in the future."

## Wood and Paper Prices

OTTAWA — The wholesale prices of wood, wood products and paper dropped to 191.1 in February, 1949, as against 191.3 in January, 1949, and 182.0 in February, 1948, on the base of 1926 equals 100, the Prices Branch of the Canadian Government reports, with wholesale prices of raw and partly manufactured forest products standing at 254.7 in February, 255.1 in January, and 239.4 in February, 1948, and fully and chiefly manufactured forest products standing at 132.2 in February, 132.2 in January, and 128.6 in February, 1948.

## Preliminary Wage Index

OTTAWA—The preliminary index of wage rates calculated by the Research and Statistics Branch of the Labor Department of the Canadian Government shows that the logging industry stood at 218.8 in 1948 as compared with 195.1 in 1947 for a percentage increase of 12.1 in the past year.

## P. C. Terminals Report

OTTAWA — The Pacific Coast Terminals Co. reports that for the 1948 fiscal year total tonnage handled was 611,408 tons, down 23.3 percent compared with the preceding fiscal year, and the largest decreases were recorded in lumber and forest products which declined 233,407 tons.

## New PTA Members

CINCINNATI—John L. Richey, secretary-treasurer of the Paper & Twine Ass'n., reports that the following six men have been accepted for membership in that Association: George O. Hipskind of Loroco Industries, Peru, Ind.; Henry C. Engel of the Central Paper Co., of Muskegon, Chicago; Wm. H. Tayler of Tayler-Martin Papers, Inc., Fort Wayne; Joseph H. Rye of the Lewis Brownville Co., Chicago; Richard Norian of the Industrial Container & Paper Corp., Chicago; and A. S. Hoffman of the Howard Mfg. Co., Council Bluffs, Iowa.

## Packaging Expo. Expands

NEW YORK—The American Management Ass'n. reports that to meet an upsurge in demand during the past six weeks it had increased to a record 115,000 square feet the display space that will be used by a record 217 exhibiting companies at AMA's 18th National Packaging Exposition in Atlantic City, May 10-13.

Approximately 15,000 are expected to attend the Exposition and the concurrent Conference on Packaging, Packing and Shipping.

## Eastern SAPI Meetings

NEW YORK — The Eastern Division of the Salesmen's Ass'n. of the Paper Industry has revised its schedule of meetings, for the Spring months at least, as follows: One large open meeting per month, and closed weekly meetings other weeks. Closed meetings are set for May 2 and May 9. Open meeting, May 16, "and so on," E. G. Amos, secretary-treasurer, reports.

## Can. Commercial Failures

OTTAWA—The Canadian Government reports four commercial failures in the pulp and paper manufactures in 1948 compared with one in 1947 and one in 1946. In the fourth quarter of 1948, one such bankruptcy was recorded, though there was none in the similar period of the previous year. The only bankruptcy in this period of 1948 occurred in Quebec.

## Freeman to SPA

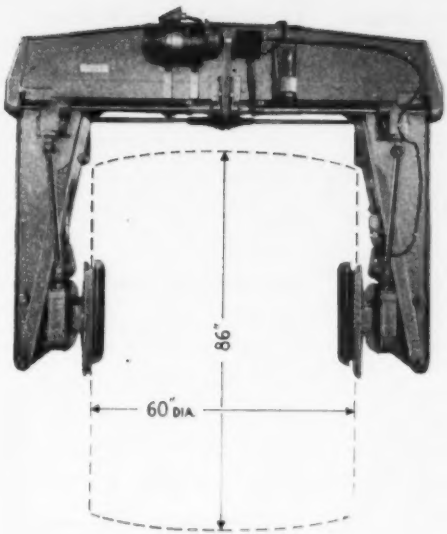
LITTLE ROCK, Ark. — Emil A. Freeman has been named publicity director of the Southern Pulpwood Ass'n. and will assume his new duties May 1. He has been forester with the Fordyce Lumber Co.

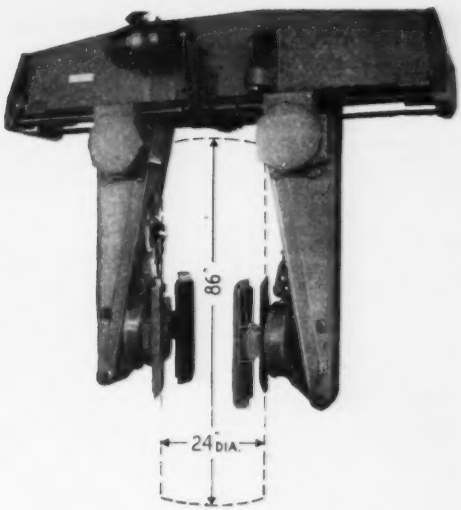
## Paper Exports Decline

WASHINGTON — February exports of paper and paper manufactures from the United States fell to $8,000,000 from $9,500,000 in January, according to preliminary Department of Commerce figures.

## Keough In N. F. Post

OTTAWA—Hon. W. J. Keough has been named Minister of Natural Resources in the Provincial Government of Newfoundland under Premier Smallwood.




# LARGE OR SMALL *ROLLS*

## *THIS GRAB HANDLES THEM ALL*

*Cleveland Tramrail Crane with Roll Grab controlled completely by operator in cab. No floor attendants needed.*

Cleveland Tramrail Systems with motorized roll grab handle all size rolls up to 6000 lbs. Stock of all types from light crepe, tissue and felt, to kraft and hard box-board are held firmly without telescoping. Motorized mechanism turns rolls to horizontal or vertical position.

This equipment speeds handling, reduces paper spoilage and greatly increases capacity of a storage room. Many installations are providing large savings. Let us tell you about them.

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Booklet No. 2012 gives authentic facts and figures. Send for free copy.

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**OVERHEAD MATERIALS HANDLING EQUIPMENT**

## Brunswick Expansion Plan

BRUNSWICK, Ga.—Officials of the Brunswick Pulp & Paper Co., state that the local plant has "more orders than it can fill." Business is so good that the board of directors is considering further expansion of the Brunswick plant. The plant is an affiliate of the Scott Paper Co., Chester, Pa., and of the Mead Corp., Chillicothe, Ohio. "A decision will be made as soon as engineers complete cost, study, etc.," company officials stated.

## Zwecker Buys Sheffield Mill

SAUGERTIES, N. Y. — Sheffield Paper Mills, Inc., has been sold to William R. Zwecker, Chicago. Sellers were the Fairchild Press, Inc.; Indianapolis News Publishing Co., Inc.; Evening News Publishing Co., Dayton, Ohio; and Pulitzer Publishing Co., St. Louis. The new company will operate under the name of The Saugerties Paper Mills, Inc., and will manufacture tissue and specialty papers.

## Letterhead Rating Contest

NEW YORK — Edgar L. Budden, assistant to the president of the Publishers Printing Co., is the winner of the first prize in the National Letterhead Rating Contest on Certificate Bond, sponsored by the Crocker - McElwain Co. of Holyoke, Mass. Second prize went to Edward Wieritsch of the American Type Founders Co. of Buffalo, N. Y.

## Wholesalers' Feb. Sales

WASHINGTON — A decline of eight percent was reported in February sales of a reporting group of paper and paper products wholesalers compared with January, in the latest survey by the Bureau of Census. Sales for February totaled $6,719,000 for the group, said the Bureau, 13 percent below the level of a year earlier.

## Bruce Incorporation

MEMPHIS, Tenn.—A Tennessee corporation has been organized to succeed the partnership conducted by Jay C. and Parker Bruce, manufacturers of folding paper cartons and other paper specialties. The Central Fibre Products Co., Chicago, will have an interest in the new company.

## Knudson National Director

SEATTLE — K. A. Knudson of the Everett Pulp & Paper Co. was elected a national director to represent the Washington Purchasing Agents Ass'n. in the National Ass'n. of Purchasing Agents on April 7. Mr. Knudson was president of the Washington group during the fiscal year just ended.

## East Fulton Acquisition

SYRACUSE, N.Y.—The Fulton Iron & Paper Co., run by the four Kamp brothers, Fulton, N.Y., is moving into a new building in East Syracuse, about 5,000 square feet in area, with a siding coming to their loading dock.

## Helffrich Leaves St. Regis

NEW YORK—Alan B. Helffrich, general sales manager of the printing, publication and converting sales division of the St. Regis Paper Co., resigned his position on April 15.

Mr. Helffrich, who is currently president of the Salesmen's Ass'n. of the Paper Industry, said he was resigning for personal reasons and his resignation was accepted with regret by Mr. Ferguson, St. Regis president.

Mr. Helffrich plans to take a well-earned rest at his home, 183 Shore road, Old Greenwich, Conn., and devote some time to civic interests and as town representative.

Mr. Helffrich will be remembered as Olympic track star of 25 years ago, where he made fame as a middle distance runner.

## Ohio Boxboard Adding

RITTMAN, Ohio—Plans to add a two-high drier section to one of the board machines at the Ohio Boxboard Co. have been reported to *Paper Trade Journal* by B. M. Thomas, vice-president of the firm.

The contract, which was awarded to the Lukenweld division of the Lukens Steel Co., Coatesville, Pa., calls for 12 jacketed steel rolls, 60" O.D. x 128" face with frames, bearings, gears and other parts to be installed at the wet end of the No. 2 machine.

This addition is part of a machine rebuilding program in order to increase production and streamline facilities.

## Wagner Firm Growing

BUFFALO, N. Y. — Victor Wagner & Son, Inc., paper box manufacturer, is spending $70,000 for new building and machinery at its plant at 125 Ash street. In 1947, a $125,000 expansion program was completed. President Victor Wagner said he hopes to have the new program finished by July 1. Employment will be boosted ten percent and manufacturing space will be expanded from 33,000 to 40,000 square feet.

## Acme Buys Buildings

PHILADELPHIA — The Acme Paper Box Co. has acquired the property of the former Eskime Knitting Mills at East Thompson, Clementine and Edgemont streets. The property consists of a group of communicating three- and four-story brick and concrete buildings with a total floor area of 60,000 sq. ft. The Acme company will occupy a portion of the plant for its own use.

## Log Dump Planned

DEWDNEY, B. C.—The Dewdney Logging Co., Ltd., has filed a description of the site and the plans of a log dump and booming ground proposed to be constructed in Nicomen Slough, here.

## Gould Named Director

NEW YORK — Harry E. Gould, president of Reinhold-Gould, Inc., and of the Aldine Paper Co., has been elected a director of the Kings County Lighting Co.

## Cardmark Buys Worthy

AGAWAM, Mass.—The Worthy Paper Co. Ass'n. went out of existence on April 12 with the sale for $60,000 of all its machinery and buildings.

Aaron Krock of Worcester, owner of the company, disposed of the property and equipment at auction.

Richard G. Donaldson, representing the Cardmark Corp. of New York, purchased the mill building, the steam plant, warehouse and smaller buildings for $30,000.

## Ahlskog Succeeds Macke

SHELTON, Wash. — Harold Ahlskog has been named manager of the Simpson Logging Co., Woodfiber division. He succeeds C. J. Macke, who has been named a vice-president. Mr. Macke will serve in an advisory capacity until his retirement on January 1, 1950.

Mr. Macke is preparing to leave on a European trip to inspect woodfiber and pulp operations this spring and summer.

## $40,000 for N. F. Forests

OTTAWA — The Canadian Government estimates that it will spend $55,126,618 in Newfoundland during the first fiscal year as a result of the entry of Newfoundland into union with Canada as the 10th province, Finance Minister Abbott disclosed in Parliament here, with $40,000 going to forest research.

## Can. Inventory Values

OTTAWA — The value of inventories of Canadian pulp and paper mills declined to 140.4 in January this year compared with 140.6 in the preceding month of December, 1948, though still higher than the 128.9 recorded in January, 1948, the Canadian Government discloses. These indexes are based on 1947 average as 100.

## Argentine Newsprint

BUENOS AIRES—Import duties for newsprint have been revalidated by the Central Bank, it was stated on April 13. They were suspended several weeks ago. The Finance Ministry said the Central Bank also would consider new applications for import permits covering the articles listed.

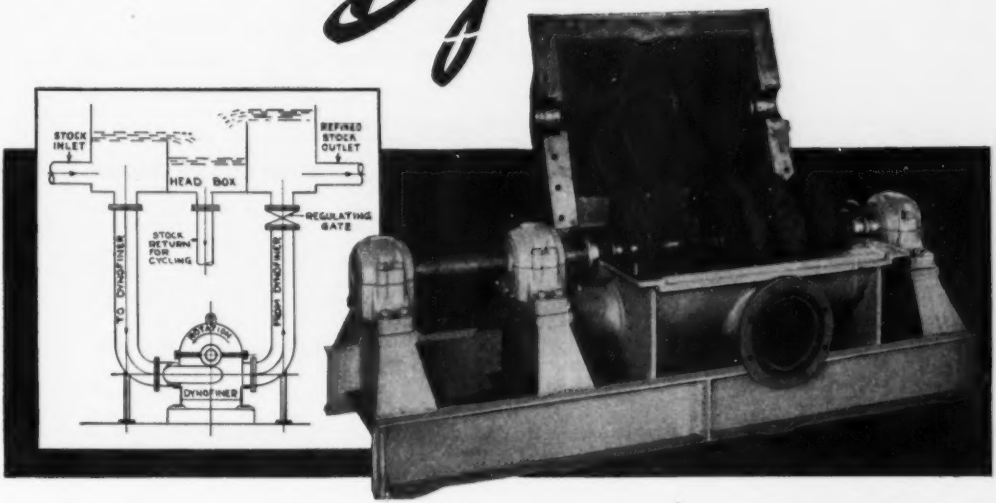
## Robinson Defender Mgr.

ROCHESTER, N. Y.—Roscoe G. Robinson, manager of the duPont Towanda (Pa.) plant, has been named manager of the Defender photographic paper plant here, succeeding Frederick B. Sackett. Mr. Robinson has been with duPont since 1929 and manager of the Towanda plant since 1947.

## Wins Top Honor

INDIANAPOLIS — Top honor for outstanding contribution to the improvement of folding paper boxes was accorded the Paper Package Co. here at the annual meeting of the Folding Paper Box Ass'n. of America in Chicago.

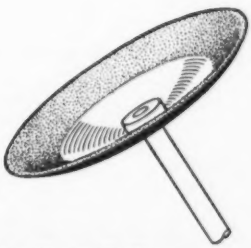
# Here's the new DynoFiner




## has no equal for continuous refining of paper stock

The efficient, continuous refining of pulp or waste paper is made possible with the DynoFiner through the use of a series of Dyno-Pellers. These are concave discs. The concave sides are lined with numerous pieces of tungsten carbide. Centrifugal force causes the pulp to be sucked and thrown against the tungsten carbide pieces. This effective dynamizing action continuously refines the stock, the fibres being completely separated one from the other.

If you want to make better pulp from a given grade of stock and make it cheaper, write today for further information on DynoFiners, for continuous operation—DynoPulpers, for batch operation.



**The DynoPeller**

is the heart of all DynoMachines. Notice how its concave face is studded with sharp particles of extreme hardness. These small points efficiently separate the fibres without hydrating, cutting or slowing down the stock.

RICE BARTON Research Corporation

WORCESTER 1, MASS.

## Expansion Waits Report

BRUNSWICK, Ga.—Decision on further expansion of pulp-making capacity at the Brunswick Pulp & Paper Co., could not be made at the annual meeting of the board of directors April 14, engineers preparing cost estimates having failed to have their study complete. The company is contemplating another $4½-million addition to boost pulp production 85 tons daily.

The directors will meet again in 60 days to consider the expansion and meantime "we're pushing for every pound of production we can get out of this plant," E. J. Gayner III, vice president and general manager, emphasized.

The condition of the market at that time will play a big part in the company's choice, as will readjusted costs of construction.

Further plans call for installation of conversion equipment for making paper products from pulp locally. The expansion of pulp production would have to come first. Paper making would require another major capital investment and would boost the number of employes needed.

The present plant is geared to the needs of its two parent companies, the Mead Corp., Chillicothe, Ohio, and the Scott Paper Co., Chester, Pa.

The board meets every 60 days, but only once a year at the plant here. Present officers were re-elected. They are:

Alfred W. Jones, chairman of the board; C. R. Van de Carr, Jr., president (also president of the Mead Corp.); Sydney Ferguson, vice president (chairman of the Mead board); J. L. Ober, vice-president (vice president of Scott Paper); E. J. Gayner III, vice-president and general manager; W. M. Carney, controller (controller of Scott); W. R. Scott III, secretary-treasurer (treasurer of Scott); J. W. McSwiney, assistant secretary-treasurer and J. H. Cunningham, assistant controller (controller of Mead).

Others attending the meeting were H. E. Whitaker, vice-president of Mead and Millard Reese counsel for the Brunswick Co.

## Better Newsprint Promised

OTTAWA — A higher grade of newsprint will be made available for some Canadian and possibly American customers by the Abitibi Power & Paper Co., about June 1, when the company will be in a position to operate its supercalender at the Fort William mill, President D. W. Ambridge, discloses.

## Repairing Mill Waterwheel

GOUVERNEUR, N. Y.—The Rushmore Paper Co. plants at Natural Dam and Gouverneur were shut down temporarily for repairs on April 18. George W. Schlidge, manager, stated that the shutdown was to permit repairs which are much in need at the mill at Natural Dam. Mr. Schlidge explained that a waterwheel had to be repaired and that it was therefore necessary to remove the water from flumes. He did not expect the plants to be closed for "much more than one week."

## Fire Guts Plant

GREENVILLE, S.C.—The Dillard Paper Co. plant at 311 West Washington street, was gutted by fire of unknown origin April 18. Loss to building and paper stock was estimated at $125,000, covered by insurance. The company's Greenville branch resumed business April 20 at 301 West Washington street in the P & N building.

## Skinner, U. S. Visitor

NEW YORK—Horace Skinner of the E. Reed Co., Ltd., Middlesex, Kemp, England, paper maker, is visiting the United States and may be contacted at Price & Pierce, Ltd., 62 East Forty-Second street. He is stopping at Hotel Lexington while in New York.

## Campaign Committeeman

ST. LOUIS—Robert Orchard, sales manager of the Orchard Paper Co., has been named chairman of the Young Adult Division of the Jewish Welfare Fund campaign, May 16-31.


**Building**

- **FOR THE PAPER INDUSTRY**
- We design, build, and equip paper and pulp mills ... steam generating plants ... and facilities for eliminating stream pollution.
- Under one contract and one responsibility, we deliver jobs complete, ready for operation.
- We also furnish engineering reports and surveys. Current cost data available at all offices.

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INDUSTRIAL ENGINEERS AND BUILDERS

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OFFICES IN NEW YORK, HOUSTON, CHICAGO, CINCINNATI AND LOS ANGELES


### AMERICAN PAPER AND PULP ASSOCIATION'S PRODUCTION RATIO REPORT*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

| Current Weeks—1949 | | Corresponding Weeks—1948 | |
|---|---|---|---|
| March 12 | 91.5 | March 13 | 100.9 |
| March 19 | 89.7 | March 20 | 101.2 |
| March 26 | 87.5 | March 27 | 98.2 |
| April 2 | 87.0 | April 3 | 100.0 |
| April 9 (Revised) | 87.4 | April 10 | 102.4 |
| April 16 | *89.7 | April 17 | *100.4 |

* Capacity in Tons—180,081. * Capacity in Tons—176,163.

COMPARATIVE MONTHLY SUMMARIES

| 1948 | | | | | | 1949 | |
|---|---|---|---|---|---|---|---|
| Jan. | 100.1 | May | 100.5 | Oct. | 99.1 | Jan. | 94.6 |
| Feb. | 99.8 | June | 95.7 | Nov. | 97.1 | Feb. | 92.8 |
| Mar. | 100.8 | July | 85.3 | Dec. | 87.1 | Mar. | ‡89.3 |
| Apr. | 100.8 | Aug. | 96.8 | | | | |
| | | Sept. | 91.8 | Year Avg. | 96.2 | | |

‡ Preliminary Ratios.

PAPERBOARD OPERATING RATIOS†

| Current Weeks—1949 | | Corresponding Weeks—1948 | |
|---|---|---|---|
| March 12 | 90 | March 13 | 102 |
| March 19 | 91 | March 20 | 104 |
| March 26 | 80 | March 27 | 104 |
| April 2 | 75 | April 3 | 98 |
| April 9 | 77 | April 10 | 103 |
| April 16 | 80 | April 17 | 100 |

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1948 | 99 | 100 | 102 | 102 | 100 | 94 | 81 | 92 | 91 | 96 | 94 | 84 | 95 |
| 1949 | 88 | 85 | 79 | | | | | | | | | | |

* All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

## N. Z. UN Canada Visitor

PORTLAND, Ore.—In New Zealand, where pines grow three times as fast as anywhere else, the government is planning a 20-million-pound sterling ($80 million) saw, pulp and paper mill project with the aid of W. H. Rambo, Portland consulting engineer. So said C. F. Skinner, a member of the cabinet of New Zealand, who was in town on April 16.

In Mr. Skinner's party were A. R. Entrican, director of forestry of New Zealand, and S. J. Robinson of Messrs. B. J. Ball & Co., who will represent the New Zealand paper trade at the United Nations pulp and paper conference in Montreal from April 26 to May 4.

Mr. Skinner said the Murapara project, as the saw, pulp and paper mill project is called, is planned more than to satisfy New Zealand's newsprint needs and produce about 70 million board feet of lumber, mostly for export.

New Zealand timber production has increased from about 320 million board feet in 1937 and 1938 to 400-odd million last year, the minister reported. He said 27 million board feet was exported last year, mostly of exotics. "We intend to push it along," he added.

By "exotics" he explained he meant varieties of trees, not indigenous, which have thrived when transplanted to New Zealand. Mr. Robinson, he said, has a specimen of one type of pine which, with 15 annual growth rings, is 22 inchest in diameter. Most plantings of exotics occurred between 1924 and 1928. For the plantations land "not suitable for farming" was used.

The party arrived in San Francisco from Auckland on April 13. It inspected the Weyerhaeuser mill at Longview and the Crown-Willamette mill at Camas and left Portland for Dallas, Texas., on April 16.

## Coating Conference

GRAND RAPIDS—The First Annual Coating Conference opened at the Pantlind on April 25. First day was given to registrations. April 26 was devoted to presentation of technical papers, a dinner and theatre party. April 27 was featured by a luncheon at which Dwight Stocker, president of the Michigan Paper Co., was toastmaster and B. R. Cancell, general manager of the St. Regis Paper Co., Deferiet, N.Y., was principal speaker. Technical papers were read at the morning and afternoon sessions. April 28 was given over to mill visits. General chairman of the Conference was P. W. Bartholomew.

## Contracts Extended a Year

NEW YORK — Contracts between the St. Regis Paper Co. and some 3,000 workers represented by the AFL in 11 mills and plants of the company have been extended for one year, following three days of negotiations between company and union officials at Deferiet, N. Y.

The extension carries the existing contract intact until April 30, 1950, but with the provision that the clause covering wage rates can be reopened once on 60 days' notice at the request of either party if it is felt that during the contract year economic conditions warrant such reconsideration.

Union representatives had sought a general 15-cent increase in wages, two more paid holidays in addition to the four already specified, and certain other benefits. However, in view of the general pattern of economic trends throughout industry, these demands were amicably negotiated with the inclusion of the reopening clause.

The contract extension covers 28 locals of the AFL representing mill and plant workers in Deferiet, Watertown, Oswego (except the machine and engineering plant), Carthage, Harrisville, Herrings, and Norfolk, in New York, and one plant in Nazareth, Pa. The International Brotherhood of Pulp, Sulphite & Paper Mill Workers and the International Brotherhood of Paper Makers represent the majority of workers.

Negotiators representing St. Regis included Alex Smalley, director of labor relations, and C. C. Wenzel, regional personnel director. Representing the pulp and sulphite workers was Vice-President Joseph Tonelli, and the papermakers' vice-president, John Jones, and representatives of the other locals.

## Collins Property Leased

WILBRAHAM, Mass. — Property of the Collins Mfg. Co. has been leased to New England Forest Products, Inc., and not sold, as originally indicated, according to a statement made on April 18 by Walter S. Ricker, formerly treasurer of the old firm.

Mr. Ricker said full production in the manufacture of paper will be resumed in a short time, but did not elaborate his statement.

Under the unannounced terms of the lease, it is claimed by a reliable source, the Forest Products group, of which former Massachcusetts Governor Robert F. Bradford is an official, will manufacture paper of the same type as that made by Collins.

"The mill here owned by the Collins Mfg. Co., and leased to the New England Forest Products, Inc., is expected to enter full production in the manufacture of paper within a short time," Mr. Ricker said in his brief statement.

## Dredging Must Wait

WATERTOWN, N. Y. — Hope of the Dexter Sulphite, Pulp & Paper Co. for water transportation by dredging the channel of the Black River to Dexter were dashed when Congressman Clarence E. Kilburn, Malone, spoke before the annual congressional legislative luncheon of the Chamber of Commerce on April 20. He said that no harbor or river dredging is being undertaken this year under congressional appropriations.

## Edwardes Talks Sulphite

CORINTH, N. Y. — The methods of producing and bleaching sulphite pulp were described in detail by Vance Edwardes at the Hudson River Mill Technical Control Department's educational meeting at the International Paper Co. mill at Palmer, near here, April 18.


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## New K-C Warehouse

NEENAH, Wis. — Contracts for construction of a six-story warehouse adjoining the company's Lakeview mill has been let by the Kimberly-Clark Corp. to F. H. McGraw & Co., engineering and construction firm of New York, Chicago and Hartford. The new warehouse, including basement, will contain nearly 260,000 square feet of floor space. It will be a modern windowless building of brick and concrete and will be used principally as a warehouse for creped wadding (used in manufacture of Kleenex and other International Cellulose products) production of the Lakeview mill. Some ground floor space is to be used for storing raw materials, as made necessary by previous manufacturing expansion at Lakeview. The building is expected to be ready for occupancy in December.

Donald W. Neville, McGraw vice-president, will supervise the project for the construction company. Excavation work began on April 25.

## Bagpak Personnel Changes

NEW YORK—The Bagpak Division of the International Paper Co. reports to *Paper Trade Journal* that effective May 9 the following changes will be made in the personnel of its branch sales offices:

A. C. Clarke will become district sales manager in Atlanta. He has been associated with the Division for many years in Chicago and Boston. C. C. Crain will continue to operate out of Atlanta and W. D. Peters, who has also been operating out of Atlanta, will join the sales organization of the head office in New York. J. A. Groden will become district sales manager in Boston. Mr. Groden is now connected with the head office in New York.

## Tax Judgment Entered

WATERTOWN, N.Y. — The United States of America on April 15 entered a judgment of $799.48 against the Frontenac Paper Corp., of Dexter, N.Y. The judgment against the corporation, headed by I. Lawrence Lesavoy of New York City, is for taxes under the federal insurance contribution act in the amount of $795.82 principal and $3.16 interest for the period of ending Dec. 31, 1948.

## Forest Products Show

GRAND RAPIDS—The latest in woodworking machinery and other forest products developments will be on display at the Forest Products Industry Show at the Civic Auditorium, May 2-4. Sponsored by the Forest Products Research Society as part of its 1949 National Annual Meeting, the Industry Show will include exhibits of more than 60 of the industry's leading manufacturers.

## Rains Drown Fire

NEKOOSA, Wis. — Torrential rains drowned out a major forest fire here on April 22 after an area eight miles long and two to five miles wide had been burned.

## Southern Kraft Affidavit

CHARLESTON, S. C.—According to an affidavit filed April 18 in the office of register of mesne conveyance here, the International Paper Co. as sole stockholder of Southern Kraft Co., operator of a large mill in nearby Georgetown, S.C., has acquired all assets of the kraft concern. The consideration was cancellation of all outstanding stock of the Southern Kraft Co.

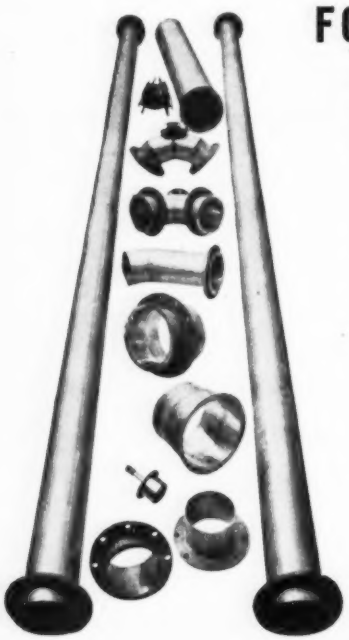
In South Carolina, the International Paper Co. acquires title to property in Abbeville, Aiken, Beaufort, Berkeley, Charleston, Chesterfield, Colleton, Edgefield, Fairfield, Georgetown, Hampton, Horry, Jasper, Laurens, McCormick, Saluda, Union and Williamsburg counties.

## $10,000 for Hospital Fund

GRAND RAPIDS, Mich. — The Central Michigan Paper Co. has contributed $10,000 of the $70,000 secured for the United Hospitals Building Fund. George S. Clark, president of the paper company, is a member of the committee which sponsored the fund campaign.

## Wirpsa to Houghton

PHILADELPHIA—Anthony J. Wirpsa will join E. F. Houghton & Co., 303 West Lehigh avenue on May 1 as a chemist on sales and development of paper products. Previously he was with the Racquette River Paper Co., Potsdam, N.Y.

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● Many companies in the chemical process industries specify Weldco tubing, fittings, and piping because Weldco is easy to fabricate, easy to weld, is 100% rust-proof and highly resistant to corrosion and chemical attack. Available in Monel and stainless steel, it has a smooth inside finish, light weight, and exceptional strength ... toughness that permits the use of lighter sections for stock lines.

Shown here are Weldco stock lines of 8-5/8" O.D. x 16 gauge wall thickness, with Van Stone type joints ... tubing and fittings—now in use in one of the South's largest pulp and paper mills. Why not investigate Weldco's cost-cutting, long-service possibilities for your plant? Send today for a free copy of the new Weldco booklet.

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## Ketchikan Plans Progress

SEATTLE—Plans for construction of the newly organized Ketchikan Pulp and Timber Co.'s 300-ton daily capacity mill are moving rapidly toward reality, it was disclosed here by President L. Turcotte. The mill, to be built at Ward's Cove six miles north of Ketchikan, will constitute the first step in tapping Alaska's pulp supply on a major scale.

The company is financed jointly by the Puget Sound Pulp & Timber Co. and the American Viscose Co., each of which has contributed $150,000 for financing of engineering and related work. The enterprise is assured of a timber supply under a firm contract with the United States government expected to produce a yield estimated at 7½ million feet of timber.

## Duncan Named Mgr.

VANCOUVER, B.C. — David Duncan has been appointed manager of the Smith, Davidson & Wright, Ltd., wholesale stationery and paper merchant firm. He formerly was manager of the Winnipeg branch of the Hudson Paper Co., Ltd.

## Mayor Quirk Re-elected

YPSILANTI, Mich.—Daniel T. Quirk, vice-president and sales manager of the Peninsula Paper Co., was recently re-elected mayor of this city by unanimous vote.

## CAMPBELL, HOPPE, ALARIK ADVANCED

**Robyn A. Campbell (left), G. F. Hoppe (center) and George H. Alarik have been given additional responsibilities in the Minnesota & Ontario Paper Co., organization, Minneapolis. . . Mr. Campbell, previously production supervisor, is now assistant sales manager of the paper division; Mr. Hoppe, previously advertising manager, is now Institute sales promotion manager, and Mr. Alarik is advertising manager. . . The latter joined Mando in 1948.**

## 30 Red Cross Trainees

NEW YORK—The Riegel Paper Corp., recently honored 30 employes who completed a special first aid class adapted by Red Cross instructor Bryan Overbeck, who is a maintenance man in the converting department of the company's Milford mill. One person on the respective shifts in each department and mill at Riegel took the course, which was designed to provide sufficient knowledge of first aid to meet serious emergencies before professional help arrives. The Riegel medical department sponsored the course. A certificate was awarded to each of the men and a medallion was presented to Mr. Overbeck for his work as instructor.

## Martin, Thompson V. P.

TORONTO — P. G. Martin has been elected vice-president and sales manager of the Thompson Folding Paper Box Co., Ltd.


Carbon Black
Titanium Dioxide
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to help make better paper products

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Witco Laminating Asphalts are quality-controlled to help form a strong adhesive bond between lamina of paper and other materials—producing an excellent water and moisture vapor barrier.

Other basic Witco materials for the paper industry are listed here. Complete information—and samples of all Witco products are yours for the asking.

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### Hardwood Pulping Process

WASHINGTON—A new process for making pulp from hardwood sawmill wastes is reported by the Timber Engineering Co., 1319 Eighteenth street, N.W. The process dispenses with pressure digesters, the entire procedure being accomplished in an open cooking vat. Wood is chipped to a smaller size with this new process, the size being no larger than a match stick. This also allows for more complete utilization of the sawmill wood wastes. The process is applicable to any hardwood. TECO said that pulp yields range from 80 to 90 percent of the original wood. Three years went into research on the project before the simple process was evolved. The pulp can be commercially used for corrugated board, insulating and hardboard, and possibly for making roofing felts.

### Mobile Plant Resumes

MOBILE, Ala. — After a week's shutdown, the International Paper Co. plant here resumed operations on April 12 and is running on a seven-day-week schedule, Major J. H. Friend, executive vice-president, reports.

### Port St. Joe Resumes

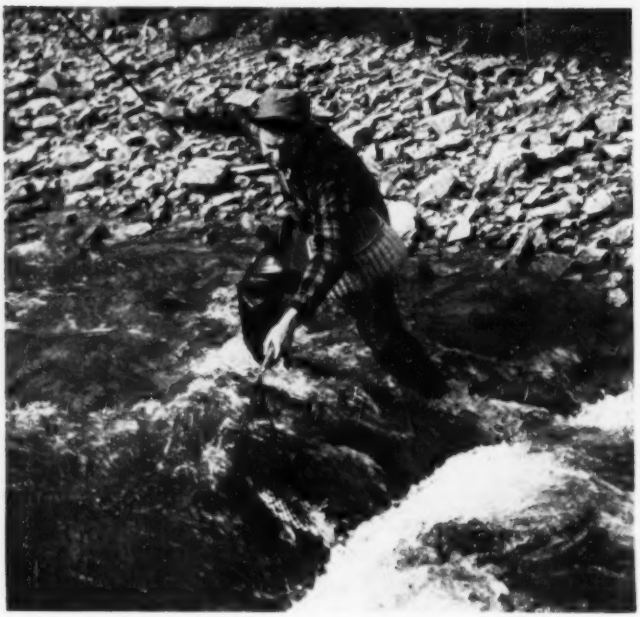
PORT ST. JOE, Fla.—The Port St. Joe Paper Co., resumed operations April 19 on a three-day-week basis, H. H. Sanders, production manager, reports.

### Visitor from England

HOLYOKE, MASS.—Maurice Bennett of Cambridge, England, a tissue paper manufacturer, was in Holyoke on April 20 studying American production methods. He visited the Sinclair Co., maker of dandy rolls, and the American Tissue Mills. From Holyoke he goes to Maine, then to Berlin, N.H., where he will visit the Brown Co., and then to the Pacific coast. While in Holyoke he was a luncheon guest of David Sinclair and Stephen L. Hollis, of the Sinclair Co.

### JDA Cites Mazer

NEW YORK—Abraham Mazer, board chairman of the Hudson Pulp & Paper Corp., was cited for his philanthropy at a dinner of the United Jewish Appeal of Greater New York, on April 27.

Fishing is not all luck. It takes skill and the right tackle. Pressing paper is like that—and our business is to make the right tackle for you.

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● BRADFORD WEST, *Pittsfield, Mass.* ● WILLIAM N. CONNOR, *Jr., Canton, Mass.* ● L. H. BREYFOGLE, *Kalamazoo, Mich.* ● ● WALTER A. SALMONSON, *2514 Northeast 52nd Ave., Portland, Oregon* ● L. L. GRIFFITHS, *Jr., Kalamazoo, Mich.* ●


# Obituary

*Earle Duffin*, 62, for many years chief sales director of the Bowater Paper Corp., Ltd., London, England, died in that city on April 18. Born in Winnipeg, Canada, Mr. Duffin joined Lord Beaverbrook soon after the first World War in the business department of the *London Daily Express* and became the paper's managing director. He resigned that post in the early '20s to go with W. V. Bowater's in London. Shortly afterwards he came to New York to become president of the Bowater Paper Co., of New York, formed to market in the U.S., products made in Newfoundland. Mr. Duffin returned to England in 1929 to become sales director of the various Bowater Co. interests there. He was a director also of the New York corporation and in this connection was here on a visit last October. He leaves his widow, Mrs. Mabel Duffin; a daughter, Miss Anne Duffin, and a son, Earle C. Duffin, Jr.

*Breckenridge Cabell Rust*, 56, Baltimore attorney and business man, who was associated with the Mudge Paper Co., and the Barton, Duer & Koch Paper Co., for many years, died in a hospital in that city on April 13. Surviving him are his widow, Mrs. Dorothy Rust; three daughters, Mrs. F. P. Thomas, Mrs. Sharles Schucker and Mrs. John F. Kiernan; a son, Breckenridge Vail Rust; and a sister, Mrs. Adrian T. Busick.

*Joseph C. Waters, Sr.*, 47, art director of the Benjamin C. Betner Co., Devon, Pa., paper bag manufacturer, died at his home in that Philadelphia suburb, on April 14. Surviving him are his widow, Mrs. Marie A. Waters; a daughter, Marie Waters, a son, John; and his parents, Mr. and Mrs. John Waters; three brothers and a sister.

## WILLIAMS PRECISION FREENESS TESTER

**The Most Accurate Freeness Tester Ever Built**

Operates on the Only Correct Principle of Freeness Testing.
Automatic Timing with Electric Stop Clock which Measures Drainage Rate through a Wire, same as on Paper Machine.

**For 25 years we have developed and manufactured Pulp and Paper Testing Equipment**

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## THE PULP & PAPER TRADING CO.

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Also Paper and Board

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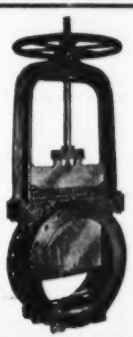

## RECORD PAPER & PULP STOCK VALVES "BONNETLESS SELF CLEARING" - - - "RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M., all iron, bronze or stainless steels, body parts plain or rubber lined.

*The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.*

- The "FAST THREADED" screw stem and ball bearing speeds valve operation.
- The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.
- The yoke mountings are such that yokes for various methods of gate operation are interchangeable.
- Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

*"RECORD PRODUCTS EXTENSIVELY USED IN DEFENSE PROJECTS."*

**RECORD FOUNDRY & MACHINE COMPANY**

LIVERMORE FALLS, MAINE U. S. A.

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**If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (39 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.**

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### WANTED DEVELOPMENT ENGINEER

Graduate engineer for development work on corrugated containers and container testing at large corrugated box plant in Southeast. Several years experience in design, evaluation, and manufacture of corrugated containers required. Box 49-179, care Paper Trade Journal. M-12

### WANTED PAPER RESEARCH CHEMIST

to supervise group of 6 to 8 men on development of paper products in research laboratory of upper midwest manufacturer of bleached groundwood, sulphite and kraft printing and converting papers. Must be well grounded in paper chemistry and manufacturing processes with development experience in these fields. Prefer man 35 to 40 years old with a good knowledge of book grade bleached papers and enamel grade coated papers. In reply give personal history, training, experience and salary expected.

**Address Box 49-52, care Paper Trade Journal.** TF

### WANTED

Graduate Engineer having several years experience, for midwest pulp and paper mill. In reply give personal history, training, experience, and salary expected. All replies kept strictly confidential. Address Box Number 49-214, Paper Trade Journal. M-5

SPECIALTY BAG ADJUSTER—Must be first class printer, 5 days, 40 hours, Metropolitan New York Area. Give complete details. Address Box 49-211 care Paper Trade Journal. A-28

## HELP WANTED

**MEN WANTED**
**Positions Open**

Board mill superintendent, Cylinder machines (Mid West); comptroller; chemists, assistant chemists and laboratory men; Yankee machine tenders. We invite correspondence (confidential) with mills seeking executives and with executives seeking new positions.

**CHARLES P. RAYMOND SERVICE, Inc.**
**294 Washington St., Boston, Mass.** A-28

### 2 SALESMEN WANTED

Wanted 2 experienced salesmen to cover industrial trade in Greater New York for Old Established Firm. Generous profit-sharing basis without investment. Real opportunity to active men with following. Located Downtown Manhattan. Address Box 49-216 care Paper Trade Journal. A-28

**WANTED—MECHANICAL ENGINEER to assist plant manager, Multiwall Bag Plant and Converting Mill in Virginia. Company in business 50 years. Must have had 5 years experience in kraft mill or bag plant. Replies confidential. State details and salary. Box 49-202, care Paper Trade Journal. A-28**

APPLICATIONS DESIRED from trained pulp and paper mill executives considering new positions. RICE EMPLOYMENT AGENCY, Radio Center Building, Little Rock, Arkansas. M-19

## SITUATIONS WANTED

### PULP AND PAPER MILL MANAGER

**YOUNG, TECHNICALLY TRAINED EXECUTIVE WITH TWENTY YEARS EXPERIENCE IN GROUNDWOOD, SULPHITE AND KRAFT SPECIALTIES, BOOK, TOILET AND FACIAL TISSUES AND TOWELING. KNOWLEDGE OF ALL PHASES OF PULP AND PAPER MANUFACTURING AND CONVERTING. DEMONSTRATED ABILITY TO REDUCE COSTS AND OPERATE EFFICIENTLY AND TO PLAN FOR FUTURE OPERATIONS. NOW AVAILABLE. Address Box 49-198, care Paper Trade Journal.** A-28

PERSONNEL MANAGER available. Several years experience in personnel administration. Special experience in labor relations and negotiations. Permanent position desired with progressive concern. Address Box 49-415 care Paper Trade Journal. M-5

## SITUATIONS WANTED

PRODUCTION MANAGER or SUPERINTENDENT 30 YEARS PRACTICAL EXPERIENCE high grade folding box board specialties on Cylinders and Fourdriniers. Address Box 49-209 care Paper Trade Journal. M-19

SUPERINTENDENT—Age 39. Desires to make change. 21 years experience on high speed Fourdrinier with Yankee dryer machines making toilet tissue, facial, towel, twisting. Excellent qualifications for handling help. Can supply references. Address Box 49-189 care Paper Trade Journal. M-5

MASTER MECHANIC and Paper Maker. Vast amount of experience installing, operating and maintaining paper mill equipment. Excellent health. References. Address Box 49-188 care Paper Trade Journal. M-5

TECHNICALLY TRAINED ENGINEER in AC-DC electricity. Knowledge of Physic, Chemistry, Electrical and mechanical drafting, mathematic through calculus, desires position in Paper and Pulp industry. Age 23. Veteran, Married. Available at once. Address Box 49-411 care Paper Trade Journal. A-28

MECHANICAL ENGINEER—With extensive background in Kraft pulp and paper mills as engineer, superintendent and manager, manufacturing highest grades of pulp and papers, invites correspondence. Best of credentials from present and former associates in regards to integrity and ability. Address Box 49-192 care Paper Trade Journal. M-5

PLANT MANAGER—Thorough experience in converting paper and boards; wants change to position offering better opportunity. Excellent production and labor relations background. Address Box 49-15 care Paper Trade Journal. A-28

DIRECTOR RESEARCH or Coordinator—College graduate, 20 years experience Research, production, managing, Converting Paper plastic sheeting, synthetic coatings, adhesives. Imagination know how. Initiative, processes. Seeking new responsibilities with well established company in Research Management. Address Box 49-210 care Paper Trade Journal. M-5

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### POWER REAM CUTTERS

New 44" National Automatic Clamp Power Cutters, with A.C. motors — carried in stock, ready immediate shipment.

Also specializing in the NEW 57" National Hydraulic—just out. Send for illustrated circular on this wonderful smooth running machine. Not a single gear on it.

**THOMAS W. HALL COMPANY, INC.**
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***Also rebuilt Shooters, Slitters, and Rewinders.***

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**SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $2.50. If repeated ⅓ rate will be charged for each consecutive repetition.**

**FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $2.50.**

**WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.**

**OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $2.50.**

**Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional.**

**Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 19, N. Y.**

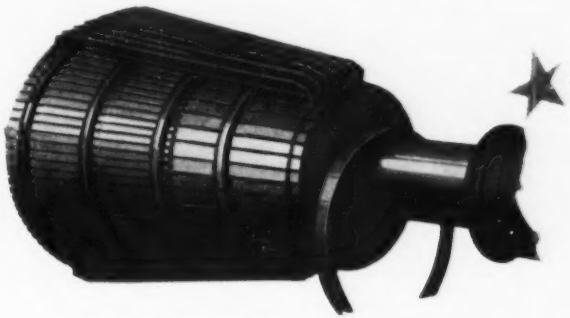
# BODY BRUISES ONLY

Here's an X-66 plug that tangled with a railroad spike. Know any other make of jordan plug that could mix it with a tough customer like that and come out with body bruises only?

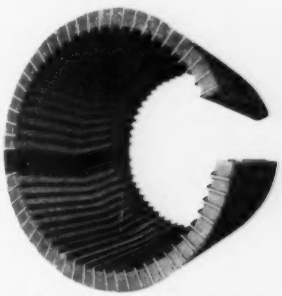
That's exactly what we said—"body bruises only" — filling wrecked — not even a lug on the body broken.

If not already using X-66 plugs, it's high time to get a couple and get acquainted.

Here, at left below, is an X-66 with a few of the bars removed. Ever see anything more ruggedly built? Any wonder that there are so many in service as you read this—not only in service but delivering twice and three times the service any ordinary plug can deliver.



Plug with bars partly removed.



BULLDOG FILLING—Just as tough as the name implies—grand running mate for the X-66.

**SHARTLE BROS. MACHINE CO., Middletown, Ohio**

DILTS MACHINE WORKS, Fulton, New York • THE KOHLER SYSTEM, DILTS MACHINE WORKS

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*DIVISIONS OF*

THE BLACK-CLAWSON COMPANY, HAMILTON, OHIO

Western Sales Office: Mayer Bldg., Portland, Oregon

Associate: ALEXANDER FLECK LIMITED, Ottawa, Canada

## FOR SALE

## FOR SALE

## FOR SALE

**BEATERS**
1—Iron tub 84x84 Shartle breaker
1—Dilts high speed with roll 50x48

**CUTTERS**
1—138" Horne duplex with duplex layboy
1—100" Hamblet duplex with duplex layboy
1— 84" Clark single with layboy
1— 84" Clark single with layboy
1— 70" Clark
2— 48" Hamblet

**DRYERS**
1—12 ft. x 100" Yankee
1—12 ft. x 130" Yankee
2— 8 ft. x 174" Yankee
5— 8 ft x 174"
4—48 x 110"
2—48 x 100"
1—48 x 89"
16—36 x 65"

**FOURDRINIER PARTS**
1—Wire 50' x 110" anti friction with 18" suction couch and three sets presses, rolls 20 x 100"
1—100" Fourdrinier Part with 30" suction couch, 20" diameter breast roll, 8" diameter table rolls.

**JORDANS**
1—No. 2 Appleton, anti friction, with 150 HP motor
1—No. 5 Miami, anti friction
1—No. 2 Dilion
3—Noble & Wood Pony

**MOULDS**
1—36 x 125"
1—40 x 84"
1—48 x 84"
1—36 x 84"

**PAPER MACHINE**
1—100" trim combination machine
1—84" trim facial tissue and M G machine with 8" dia. Beloit dryer
1—84" Fourdrinier paper machine

**PUMPS**
2—12 x 12 Gould triplex
1—10 x 20 Shartle duplex
1— 7 x 10 Gould triplex

**SCREENS**
2—No. 3 Bird
Flat screens, 3 to 10 plate
Loith Walk and Moore & White rotary

**SLITTERS**
1—234" Rice Barton
1—100" Moore & White four drum
1—150" Warren two drum
1—138" and one 128" Pusey & Jones two drum
1—112" Kidder
1— 62" Langston
1— 36" Cameron
1— 32" 64 W Cameron

**SUCTION ROLLS**
1—30 x 100" Couch
1—42 x 100" Press
1—25 x 100" Couch
1—18 x 140" Couch
1—18 x 92" Couch

**ELECTRIC TRUCKS**
1—Baker electric truck, model D T 0
1—Walker electric highway truck, 4000 lb. Capacity, Model 42 with generator
1—Automatic tractor and plier

**FRANK H. DAVIS CO. 175 Richdale Ave., Cambridge, Mass.** TF

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1—62" Roll Pasting Machine. Including Dryers and Pope Reel.
1—65" Camachine 9. Complete with 46 Cutting Units.
1—40" Kidder Model SL Slitter & Rewinders. Complete with 60 sets of cutters and rewind shafts.
1—49" Inman Board Slitter and Rewinder. Rewinds 48" diameter rolls.
Power Paper Cutters: 4 Seybold: 40"—10Z, 54" 20th Century, 54" Holyoke and 56" Dayton. 6 Oswego: 34", 38", 44", 50", 57" and 74". 2 Acme: 32" and 42". 1 White: 44". 1 S&W Undercut: 63".
1—48" wide, 4-color Waldron Aniline Printing Press.
1—90" Creping and Plasticizing Machine. Complete with Dryer Section, Rewind and AC Motor Equipment.
1—65" Martin Squeeze Roll Waxing Machine. For Water, Finish or Dry Waxing. Equipped with 3—16" diam. Bronze Cooling Drums. AC Motor Equipment.
1—Weber Cellophane Bag Machine—Model 2CN-247—With Motor Equipment.
1—Practically new, late type Hudson Sharp Embosser with linen pattern. Rolls 50½" wide face, Steel roll 274½" in circumference, equipped with 10 H.P., A.C. Westinghouse motor.
1—Brand new 30" Hudson-Sharp No. FE-10 Roller Bearing Embossing Machine, late type, Linen Design Rolls.
1—Hudson Sharp Banding Machine for package work.
1—Paper Converting Machine Co. Bundling Press.
1—50" M&W Single Rotary Sheet Cutter with slitting attachment—3 sets of slitters. M&M Single Layboy—3 partitions and 9-roll triple-deck backstands.
1—84" Hamblet roller bearing new duplex sheet cutter, Model 28, complete with slitting attachment, six pairs of slitters. With new Hamblet 84" electrically driven duplex layboy and two roll backstands for 30" diameter rolls.
1—96" Clark Aiken anti-friction bearing Single Rotary Sheet Cutter with slitting attachment. Moore & White 5 partition Layboy and 6 roll double-deck backstands. Excellent condition.
1—104" Beloit Duplex Sheet Cutter, Equipped with duplex Shear Slitters and Fly Knives and two Reeves Drives.
1—New 100" Manco layboy with single type tandem tape system with air delivery for one pile.
1—Erie Layboy, size 85" x 45".
1—74" Norwood 9 roll stack of Super Calenders. Complete with DC Motor equipment.
1—E. D. Jones Breaker Beater, 66" dia. roll with 61" face.
2—81" Dietz Toilet Paper Perforators. Sheets 4½ x 4½ and 4½ x 5 and paper towels perforated 7½" and 13½".
1—63" late type Dietz heavy type toilet & towel converter with combination cylinder Perforators 4½", 5", 7½", 12½" & 15". Friction rewind AC motor equipment.
1—Sandusky Suction Couch roll. Overall face 82". Suction face 76". Diam. 14½". Complete with drive.
1—Napkin machine for cocktail napkins. Complete with scalloping dies.
1—36" Beck Sheet Cutter with 3 roll backstand and jogger delivery table.

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**21 East 40th St., New York 16, N. Y.** A-28

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1—62" Camachine Type 10 Model 5. Anti-friction bearings, throughout. 10 sets of cutters, rewind shaft and AC motor equipment.
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## SYNCHRONOUS MOTOR BARGAIN!

New rewound, perfect condition, never installed: 150 hp, G.E., 60 cy, 440 V, AC, 600 rpm, slide rails, belt driven exciter, rheostat, AC panel, AC Ammeter, DC Ammeter with exciter shunt, field rheostat mounting, manual field switch, discharge resistor clip. Quick Sale Price! INTERNATIONAL FELT CORP., 121 SO. BROAD ST., PHILA., PA., PHONE: Kingsley 6-1414.

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44" & 65" Paper Power Cutters, like new; Coaters; Wasers; Sheeters; Die Cutters; Printers; Slitters & Rewinders. Write for Price Bulletin #155 listing over 70 Paper Converting Machines. Priced exceptionally low.

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Chicago, Ill. TF

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FOR SALE: 14 x 20 and 21 x 28 Baum Automatic Job Folders; No. 145 Economy heavy duty Power Baler; 39" Chandler & Price Power Cutter; 22 x 30 Harris Offset Press; Brackett 3-way Trimmer; 25 x 41 Thompson Cutter & Creaser; Model 9-B Sheridan Embosser; 25 x 38 Seybold Die Cutter; 58" and 78" Sheeters, with and without backstands. What are your needs? Thomas W. Hall Co., 120 West 42nd St., New York 18. A-28

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FOR SALE—EQUALIZERS or wire wound DOCTOR RODS for carbon, wax, glue, asphalt and other coating machines. Precision wound on ⅛, ¼ & ½ rods with music spring wire. .004 & .0015 available in stainless steel wire. De NEVE & CONSLER COMPANY, P. O. Box 817, Rochester, 3, N. Y. A-28

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BRAND NEW—HEAT EXCHANGERS—Steel Shell; Bronze Heads; Copper Nickel Tube Sheets and Tubes

4—"ROSS" Size 1024—Type BCP—Single Pass—51 Sq. Ft. Heat Transfer Surface. Price:—$100.00 each

10—"PATTERSON-KELLEY" Single Pass 344 Sq. Ft. Heat Transfer Surface. Price:—$500.00 each

Full details furnished upon request.

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BALA-CYNWYD, PA. M-5

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**Paper Power Cutters; Slitters & Rewinders; Die Cutters; Printers; Scorers & Creasers; Gluers & Wrappers; Coaters; Laminators; Wasers; Stitchers; Brightwoods.**

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For Sale—Westinghouse steam turbine serial #15079, 125 HP, 150 PSIG, 10# back-pressure, speeds 5150 to 736 RPM or 5150 to 320 RPM. Turbine in excellent condition. 1 Nash Hytor vacuum pump, size H-4 Test No. 1612, directly connected to Westinghouse motor, 10 HP, 1750 RPM, 220-440 V, 60 cycle, 3 phase. Pump very new. 1 set primary presses consisting of 3 rubber and 3 steel rolls, rolls 14" diameter, 138" face, 149" shoulders, journals 12" long, 3⅞" diameter, all complete with frames and bearings. Rolls can be cut down if desirable. Address Box 49-212 care Paper Trade Journal. M-20

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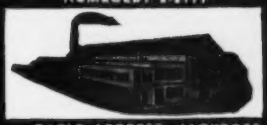

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**1—Pusey & Jones 120" Ball Bearing Fourdrinier Paper Machine. 60" diameter dryers—suction press and suction couch—Spiral Bevel Gear Drives.**
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**1—6 cylinder 132" Board Machine, 67 Dryers, 42" diameter. Complete with all auxiliaries.**

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2—Valley Iron 750 lb. Iron Tub—Bronze filled.
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**CALENDER ROLLS**

54 Filled Iron Rolls—Assorted sizes.

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1—104" face 5 roll stack, with drive
1—76" face 7 roll with drive.
1—76" face 3 roll with drive.
1—112" face 7 roll.
1—82" face 5 roll Sandy Hill.

**CONVEYOR**

1—18½ ft long x 30" wide—with motor.

**COUCH ROLLS—BRASS**

1—104" face x 18" dia.
1—118" face x 18" dia.
1—150" face x 18" dia.
1—82" face x 19½" diameter.
2—94" face x 21½" diameter.

**COUCH ROLLS—RUBBER**

1—118" face x 20" dia.—New
1—139" face x 19" dia.
1—141" face x 21" dia.

**CYLINDER MOLDS**

4—IMPCO 40" diameter x 84" face
3—38" diameter x 138" face Cylinder molds with vats, couches—ball bearing.
2—74" face x 36" diameter.
1—134" face x 36" diameter, with stainless steel shafts.
1—78" face x 30" diameter.

**CYLINDERS AND VATS**

2—136" face x 36" dia.—with vats, couch, sample.

**DRIVES**

1—DC. Reeves Drive. 40-50 h.p.

**DRYERS**

4—74" face x 28" diameter with gears.
5—142" face x 48" diameter.
3—124" face x 48" diameter.
1—80" face x 36" diameter.
1—77" face x 48" diameter—with gear.
1—64" face x 30" diameter.
18—78" face x 36" diameter, complete with 2 deck frames, gears, bearings and steam joints. Drives, line shaft and felt rolls are available.
1—78" face x 18" diameter with gears and bearings.
2—45" face x 24" diameter—chromium plated.
1—120" face x 18" diameter—Baby Dryer.
11—64½" face—36" diameter with 2 deck frames, gears and bearings.
3—63½" face—36" diameter—bearings and gears.
2—82½" face—36" diameter—bearings and gears.
6—96" face x 48" diameter.
95—126" face x 42" diameter.

**EMBOSSER**

1—Hudson Sharp 53" Embosser. Ball bearing. Complete with winder and drive.

**EXTRACTOR ROLLS—VACUUM**

1—Downingtown—64" face x 17" diameter with bearings & stand.

**FLAT SCREENS**

5—10 plate Sandy Hill.
1—Sandy Hill 8 plate—with scraper.
1—New Sandy Hill 12 plate, with scrapers and V-belt drive.
1—Montague 8 plate—ball bearing.

**FOURDRINIER SECTIONS**

1—P & J 156" x 80 ft. ball bearing. Complete from inlet to 22" diameter suction couch. Brass and Rubber covered table rolls. 6 Brass Suction Boxes operated at 1000' per minute.
1—M & W 82" x 49' complete with 3 suction boxes, shake, 3 section presses and size press.

**HAMMERMILLS**

1—American Hammermill—57" roll fruitive pulping equipment

**HEAD BOXES**

1—118" Bronze Lead Lined. Basett.

**INLETS**

1—Voith inlet for 151" wire with 29" slice. Complete, including drive.
1—96" All bronze—adjustable.
1—141" Beloit complete with distributor roll.

**JORDANS**

1—Jones Standard—ball bearing direct connected to 150 h.p. G.E. 440 volt motor.
—#3 Miami, for motor drive.
1—Jones Majestic, roller bearing—stainless steel filling—for motor drive.
1—Jones Majestics with base and couplings—bronze filled, 2 sets of new bronze fillings.
2—#3 Appleton with base and coupling—bronze filled.
1—Dillon Horse #2—direct connected 75 h.p. Stainless steel ¼" filling.
1—#4 Smith & Winchester—Ball bearing

**LABORATORY EQUIPMENT**

1—12" 6 roll calender stack with Westinghouse 7½ h.p. motor.

**MOTORS**

1—Fairbanks Morse — 30 h.p. — 495 r.p.m. — 220 440/550
1—Reliance 25 h.p. ball bearing, 550 v., 3 phase, 60 cycle—1750 r.p.m.
1—General Electric 150 h.p.—440 v.—3 phase—60 cycle—690 r.p.m.

**PRESS ROLLS**

1—110" face x 15" diameter—rubber.
1—101" face x 18½" diameter—rubber.
1—123½" face x 17½" diameter—rubber.
1—112" face x 15" diameter—rubber.
1—127" face x 17½" diameter—brass.
1—117" face x 24" dia.—Brass.
1—84" face x 20" dia.—Rubber.
1—178" face x 22" dia.—Rubber
2—118" face x 21" dia.—Rubber
1—147" face x 11¾" dia.—Rubber
1—74" face x 18" diameter—Rubber.
1—100" face x 17" diameter—Rubber.
1—138" face x 22" diameter—Brass.
1—102" face x 16" diameter—Rubber.
1—119" face x 17" diameter—Brass.
1—76" face x 19" diameter—Brass.
1—53" face x 14" diameter—Brass.
1—53" face x 12" diameter—Iron.
1—55" face x 18" diameter—Iron.
1—74" face x 18" diameter—Iron.
1—73" face x 14" diameter—Iron.
1—102" face x 18" diameter—Brass.

**PULLEYS**

30—Split cast iron tapered Pulleys.

**PULP EQUIPMENT**

1—Jigger—1 deck—vibrating screen
1—Mills & Morrill #17 Pulpwood chipper.
1—5' Carthage Disc Barker
1—80" Carthage Ball Bearing Chipper—4 knife

**PULPERS**

1—#2 Lannoye Pulpers

**PUMPS**

44—Centrifugal Pumps. Direct connected. Belt Drives. Extended base for motor. Assorted capacities and heads. Most used less than one year.

**PUMPS—OPEN IMPELLER**

1—Morris open impeller—8" suction—3" discharge —belt driven.
1—Morris Vertical Open Impeller 6 x 6—5½" s.p.m. 3 percent stock—50' head—connected to G.E. 15 h. p. 220-440 volt 3 phase—60 cycle—1165 r.p.m.
1—New Gould—ball bearing—8" suction—4" discharge—700 g.p.m.—60' head. Requires 20 h.p. at 1750 r.p.m.
1—New Gould—ball bearing—8" suction—6" discharge—1500 g.p.m.—43' head. Requires 25 h.p. at 1150 r.p.m.
1—New Goulds—ball bearing—8" suction—6" discharge—1200 g.p.m.—60' head. Requires 20 h.p. at 1150 r.p.m.
1—New Gould—ball bearing—8" suction—6" discharge—1000 g.p.m. 40' head. Requires 20 h.p. at 1150 r.p.m.
1—New Gould 6" suction 4" discharge 500 g.p.m. 40' head. Requires 15 h.p. at 1750 r.p.m.
1—New Gould 4" suction 3" discharge 200 g.p.m. at 40' head. Requires 5 h.p. at 1750 r.p.m.
1—Warren—10 x 6, 1000 g.p.m.—30' head—Belt driven.
1—Frederick—6 x 4, 400 g.p.m.—30' head—for motor drive.
1—Warren—4 x 3, 300 g.p.m. 30' head. Belt driven.
1—De Laval 6 x 6, 250 g.p.m. 30' head—for motor drive.
1—De Laval—6 x 6, 500 g.p.m. 30' head—for motor drive.

**REELS**

2—Beloit 110" two bowl Reel.
1—M & W 78" 2 bowl reel.
1—Beloit 132" two bowl upright reel.
1—Beloit 116" two bowl upright reel.

**ROLLS**

2—18" diameter x 120" face with ball bearings and stands. Bored for steam.
250—Brass, Steel Rolls, Assorted sizes.

**ROTARY SCREENS**

2—Jones Lofthwalk—cylinder 84" face x 28" diameter.
1—#2 Leith-walk-ball bearing.

**SCREW PRESSES**

3—Valley Voith Screw Presses, Size 2A, with new spare sets of plates.

**SHEETERS**

3—Hamblet 51" Single Knife with 6 roll back stands and motors.
1—Hamblet 81" Single Knife with 6 roll back stand and motor.
1—Beloit Duplex 104", complete with drive.
1—Hamblet Duplex—138".

**SHREDDERS**

3—Sprout Waldron Cutters — type F-11 — 40 knives. Used 30 days.

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2—Pusey & Jones 100" high speed slitters and rewinders.
1—Cameron 52" type 8 Model 5A with friction tension.
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**STUFF PUMPS**

1—Beloit 10 x 20 triplex—with motors and chain drives.

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1—Millspaugh 22" diameter x 138" drilled face.
1—Millspaugh 22" diameter x 138" drilled face.
1—Beloit 107" drilled face x 22" diameter. Anti friction bearings.
1—Millspaugh—14½" diameter x 93" drilled face.

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3—7 roll 62" face.
1—7 roll 65" face.
1—7 roll 56" face.

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1—Saybold 84" with motors.

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1—Beloit 10' diameter x 132" face with stands, gears, bearings and drive.
1—Beloit 12' diameter x 132" face with stands, gears, bearings and drive.

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1—6 plate Screen
1—8 plate Screen
1—36" x 72" Cylinder Mould
1—30" x 48" Cylinder Mould
1—42" Revolving Knife Cutter

Give make, condition and location for inspection, as well as best price.
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WANTED—Power Paper Baler, good operating condition, 100 to 200 lb. bale capacity. Advise make and age. Address Box 49-414 care Paper Trade Journal. M-5

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WANTED—One or more 8" x 12" Moore & White Duplex stock pumps or a similar pump of approximately the same capacity. LA-TEX FIBER INDUSTRIES, INC., Beaver Falls, N. Y. M-19

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| 300 | Westghse. | CW | 2300 | 367 |
| 300 | Al. Chlrs. | ANY | 2300 | 720 |
| 300 | Westghse. | CW | 440 | 900 |
| 250 | Gen. Elec. | IM | 2300 | 450 |
| 250 | Cy. Whlr. | | 440 | 600 |
| 250 | Ideal | | 440 | 720 |
| 125 | Gen. Elec. | IM | 2300 | 720 |
| 100 | Westghse. | CW | 440 | 575 |
| 100 | Al. Chlrs. | ANY | 440 | 720 |
| 100 | Gen. Elec. | IM | 440 | 900 |
| 75 | Gen. Elec. | IM | 440 | 514 |
| 75 | Cy. Whlr. | 256J | 440 | 585 |
| 50 | L. Allis | GH | 440 | 870 |
| 35 | F. Morse | | 440 | 1800 |
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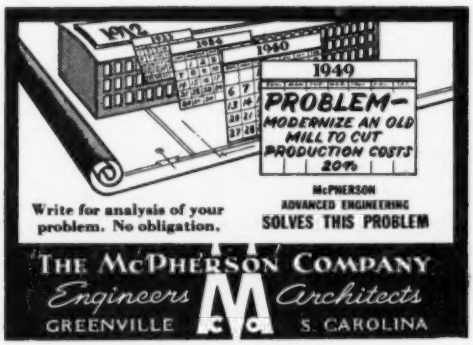


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Nopco Chemical Co.
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E. D. Jones & Sons Co.
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Valley Iron Works Co.
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Shartle Brothers Machine Co.
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Shartle Brothers Machine Co.
Timken Roller Bearing Co.
Valley Iron Works Co.

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Downingtown Mfg. Co.
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The Midwest Fulton Mch. Co.
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J. J. Ross Company
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Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
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Bahr Brothers Mfg. Co.
Dilts Machine Works, Inc.
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E. D. Jones & Sons Co.
Lukenweld, Div., Lukens Steel Co.
Midwest-Fulton Machine Co.
Shartle Brothers Machine Co.
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Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

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Carthage Machine Co.
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Frederick Iron & Steel, Inc.
Hamblett Machine Co.
Hardinge Company, Inc.
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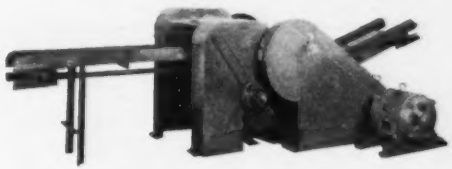

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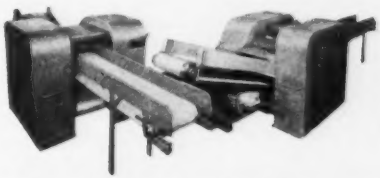

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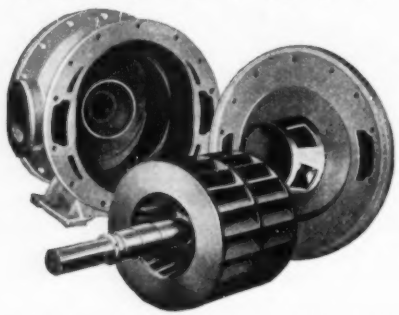

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Calco Chemical Co.
Calgon, Inc.
Cowles Chemical Company
Diamond Alkali Co.
Dow Chemical Company
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General Dyestuffs Corp.
Geigy Co., Inc.
Gottesman & Co.
Hercules Powder Co.
Hooker Electrochemical Co.
The Kinsley Chemical Company
Monsanto Chemical Company
National Aluminate Corp.
Niagara Alkali Company
Nopco Chemical Co.
Pennsylvania Salt Mfg. Co.
Philadelphia Quartz Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Rohm & Haas Co.
Solvay Sales Corp.
Virginia Smelting Co.
Witco Chemical Co.
Wyandotte Chemical Corp.

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Cowles Chemical Company
The Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Hercules Powder Co.
Monsanto Chemical Company
Nopco Chemical Co.
Philadelphia Quartz Co.
Pittsburgh Plate Glass Co.
Solvay Sales Corp.
Wyandotte Chemicals Corp., J. B. Ford Division

**Clutches**
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Black-Clawson Company
Farrel-Birmingham Co.
Hardinge Company, Inc.
Hudson Sharp Machine Co.
Rodney Hunt Machine Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works

**Coating Machinery**
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Hudson Sharp Machine Co.
The Mayer Machine Co., Inc.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G., & Co., Inc.

**Coating Materials**
American Anode Div., The B F. Goodrich Chem. Co.
E. I. Du Pont De Nemours & Co., Inc., Pigments Dept.
The Goodyear Tire & Rubber Company
Monsanto Chemical Company
Nopco Chemical Co.

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Nash Engineering Co.

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DeZurik Shower Company
Paper & Industrial Appliances

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Ferguson, Hardy S.
C. M. Guest & Sons
Hardy, George F.
Alvin H. Johnson & Co., Inc.
Main, Inc., Chas. T.
The MacPherson Company
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The Rust Engrg. Co.
J. E. Sirrine & Co.
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The Bristol Co.
The Brown Instrument Co.
Cochrane Corp.

**Controls**
Askania Regulator Company
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
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Stickle Steam Specialties Co.

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Frederick Iron & Steel, Inc.
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Link Belt Company
Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O.
Shartle Brothers Mch. Co.

**Core Cutters**
Suburban Machine Co.

**Cores**
Fiberman Paper Co.
Hubbard Spool Co.
Rodney Hunt Machine Co.
Smith & Winchester Mfg. Co.
Sonoco Products Co.
Walker-Goulard-Plehn Co.

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Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John

**Cranes**
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Link Belt Company
Whiting Corp.

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Mercury Engrg. Corp.

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Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Moore & White Co.
Perkins & Son, Inc., B. F.
The Smith & Winchester Mfg. Co.
Taylor Stiles & Co.

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National Tube Co.

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Valley Iron Works Co.

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Adell Chemical Company

**Deckle Webbing**
Williams-Gray Co.

**De-Inking**
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Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
Roderick O'Donoghue
Shartle Brothers Machine Co

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General Dyestuff Corp.
Kinsley Chemical Co.
Midwest-Fulton Machine Co.
Monsanto Chemical Company
Philadelphia Quartz Co.

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**Design Construction**
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**Detergents**
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Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

**Dewaxing Chemicals**
Adell Chemical Company
General Dyestuff Corp.
Nopco Chemical Co.

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The Biggs Boiler Works Co.
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Foster Wheeler Corp.
Lukenweld
Pusey & Jones Corp.

**Dirtee**
Bird Machine Co.

**Dispersing Agents**
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Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.

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Lobdell Co.
Lodding Engineering Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

**Doctor Blades**
Bird Machine Company
Black-Clawson Company
Lodding Engr. Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

**Driers**
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Hardinge Company, Inc.
Lukenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
The Youngstown Welding & Engrg. Co.

**Drives**
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Bird Machine Co.
Black-Clawson Company
Chain Belt Company
Davis, Frank H., Co.
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
General Electric Company
Gibbs-Brower Company, Inc.
Rodney Hunt Machine Co.
Link Belt Company
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co
Syon Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp

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Stickle Steam Specialties Co.

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Downingtown Mfg. Co.
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M. W. Jenkins Sons, Inc.
E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co.
John Waldron Corp.

**Dusting Brushes**
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Ciba Company
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Geigy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.
C. K. Williams & Co.
Witco Chemical Co.

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The Midvale Company
Northern Engraving & Mch. Co
B. F. Perkins & Son, Inc.
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Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

**Enzymes**
Rohm & Haas Co.

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Swenson Evaporator Co., Div of Whiting Corp.

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B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O

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Bulkley, Dunton Pulp Co., In
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Huyck & Son, F. C.
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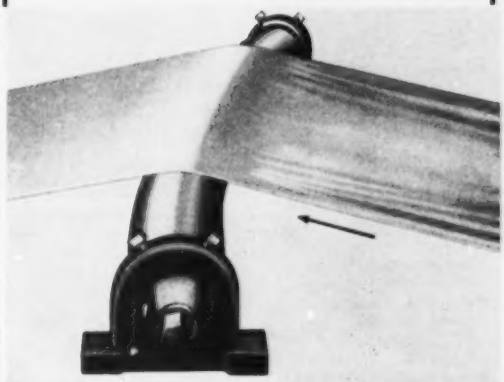
Get Rid of

WRINKLES and CREASES



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Free-Wheeling Expanders

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**COMPANY X*** has at least one expander in use on every machine in the plant and the management is completely satisfied with their performance.

**IN ACTUAL USE** the Mount Hope Expander belies its name since it does the job without expanding the moist paper. It is equally effective with dry paper, eliminating baggy edges that cause out of register printing on offset and lithograph presses. Used on rewinders, it eliminates welts and wrinkles.

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* *A large New England Paper Converting Company.*

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### Felt Cleaners
Adell Chemical Company
Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Nopco Chemical Co.

### Felt Conditioners
Bird Machine Co.

### Felt Guides
Black-Clawson Co.
Frank W. Egan & Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

### Fillers
American Cyanamid Company, Industrial Chemicals Division
W. H. Loomis Talc Corp.
A. M. Meincke & Son, Inc.
Vanderbilt Co., R. T.
Witco Chemical Co.

### Filters
Bird Machine Company
Cochrane Corp.
Hardinge Company, Inc.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
Witco Chemical Co.
Walworth Company

### Fittings
Crane Company
Ladish Company
Phoenix Products Co.
Walworth Company

### Flexible Couplings
Ajax Flexible Coupling Co.

### Flooring, Grating and Treads
The Goodyear Tire & Rubber Company
Norton Co.

### Flow Boxes, Stainless-Clad
Lukens Steel Co.

### Forming Machines
Black-Clawson Co.
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
Oliver United Filters, Inc.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

### Freeness Testers
Testing Machines, Inc.

### Gaskets
The Goodyear Tire & Rubber Company

### Gears
American Manganese, Steel Div.
Black-Clawson Company
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Valley Iron Works Co.
Waldron Corp., John
Westinghouse Electric Corp.

### Grinders
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

### Grinding Wheels
Norton Company

### Guides, Web
Askania Regulator Company
The Moore & White Co.
Mount Hope Machinery Co.
Bound Brook Engrg. Co.

### Gums
National Starch Products Inc.
Stein-Hall Co., Inc.

### Heads
Babcock & Wilcox Co.
Lukens Steel Company

### Heat Exchangers and Recovery Systems
William Allen Son's Company
Foster Wheeler Corp.
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

### Heating, Ventilating & Air Conditioning
The Appleton Machine Co.
Armstrong Machine Works
Cochrane Corp.
E. D. Jones & Sons Co.
General Electric Co.
Leeds & Northrup
Minneapolis-Honeywell Regulator Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

### Hose (Air, Water, Suction, etc.)
The Goodyear Tire & Rubber Company

### Impregnants
American Anode Div., The B F. Goodrich Chem. Co.

### Industrial Tractors
Clark Equipt. Co., Clark Tractor Div.
Towmotor Corp.

### Ink Gravure
Gotham Ink & Color Co.

### Instruments, Testing and Measuring
Askania Regulator Company
Bauer Brothers Co.
N. P. Bowsher
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
The Foxboro Company
General Electric Company
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Taylor Instrument Cos.
Testing Machines, Inc.
Williams Apparatus Co., Inc.

### Joints
Johnson Corp.
Perfecting Service Corp.

### Jordan Fillings
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

### Knives
Black-Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

### Knot Boring Machines
DeZurik Shower Company

### Laboratories
Timber Engrg. Co.

### Laboratory Equipment
William Allen Son's Company
Appleton Machine Co.
Bauer Brothers Co.
The Biggs Boiler Works Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.

### Lay Boys
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.
Suburban Machine Co.

### Lubricants
Sinclair Refining Co.
Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

### Materials Handling
Cleveland Crane & Engrg. Co.
The Wellman Engrg. Co.

### Micrometers & Calipers
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

### Moisture Content Control
Askania Regulator Company
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.

### Motors and Generators
Allis-Chalmers Mfg. Co.
Chicago Electric Company
Fairbanks, Morse & Co.
General Electric Company
Ingersoll-Rand Co.
Reliance Electric & Engrg. Co.

### Nickel and Nickel Alloys
The International Nickel Co.

### Nozzles
Link Belt Company

### Packing Boxes
Johnson Corporation
The Moore & White Co.
Perfecting Service Corp.
Shartle Brothers Machine Co.

### Paint
American Marietta Co., Valdura Division

### Paper Machines
Bagley & Sewall Co.
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

### Paper Machine Slices
Black-Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

### Paper Tube Machinery
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Suburban Machine Co.

### Pasting Machines
Black-Clawson Company
Davis, Frank H., Co.
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

### Penstocks
The Biggs Boiler Works Co.

### Perforated Metal
Allis-Chalmers Mfg. Co.

### Pipe
American Cast Iron Pipe Co.
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Ladish Company
Michigan Pipe Co.
Michigan Steel Casting Co.
National Tube Co.
Walworth Company
Youngstown Welding & Engrg. Co.

### Pipe Fittings
American Cast Iron Pipe Co.
The American Rolling Mill Co.
Crane Company
Ladish Company
Michigan Steel Casting Co.
Phoenix Products Co.
Walworth Co.

### Pipe Markers
W. H. Brady Co.

### Pitch Control
General Dyestuff Corp.
Monsanto Chemical Company
Rohm & Haas Co.

### Platers
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

### Plates
Armco Steel Corp.
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
J. O. Ross Engrg. Corp.
Lukenweld
Lukens Steel Company
Timken Roller Bearing Co.

### Plugs
The Appleton Machine Co.
Black-Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

### Precision Sample Cutter
Testing Machines, Inc.

### Preservatives
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

### Pressure Vessels, Steel and Alloy
William Allen Son's Company
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
Combustion Engrg. Co., Inc.
Foster Wheeler Corp.
The Midvale Company

### Presses
Black-Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
The Moore & White Co.
Paper Converting Machine Co., Inc.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

### Pulp Classifier
The Bauer Bros. Co.

### Pulp Stock Valves
Crane Company
Record Fdy. & Mach. Co.
Shartle Bros. Mach. Co.

### Pulpers
American Paper Mchy. & Engrg. Works, Inc.
Bauer Brothers Co.
Dilts Machine Works
Midwest-Fulton Machine Co.
Shartle Brothers Machine Co.

### Pulps
Brown Company
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Elof Hansson, Inc.
Lyddon & Co. (America), Inc.
Parsons & Whittemore, Inc.

# to Buy

Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Pulp Sales Corp.

### Pulpstones
Norton Company

### Pumps
Allis-Chalmers Mfg. Co.
American Manganese, Steel Div.
American Paper Mchy. & Engrg. Works, Inc.
Black-Clawson Company
Buffalo Pumps, Inc.
Byron Jackson Co.
Dorr Company
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Frederick Iron & Steel, Inc.
Gibbs-Brower Company, Inc
Ingersoll-Rand Co.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Paper Converting Mch. Co.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Company

### Radiant Burners
Red-Ray Mfg. Co., Inc.

### Rag Cooking Processes
Adell Chemical Co.
William Allen Son's Company
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

### Rag Cutters
Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

### Reeausticizing Plants
The Dorr Company

### Recovery Systems
William Allen Son's Company
Babcock & Wilcox Co.
Bulkley, Dunton Pulp Co., Inc.
Combustion Engrg. Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O
Valley Iron Works Co.

### Reels
The Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co.
Hudson Sharp Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.

### Refiners
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sutherland Refiner Corp.
Valley Iron Works

### Regulators
Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Bristol Company
Cochrane Corp.
DeZurik Shower Company
The Foxboro Company
Jones, E. D., & Sons Co.
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
Midwest-Fulton Machine Co.
Minneapolis-Honeywell Regulator Co.
National Technical Laboratories
Paper and Industrial Appliances
Shartle Brothers
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan

### Research Chemists
Timber Engrg. Co.

### Resins
American Cyanamid Company
Industrial Chemicals Division
The Dow Chemical Company
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Rohm & Haas Co., Resinous Products Div.

### Rolls
American Cast Iron Pipe Co.
Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
The Midvale Company
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, B. F., & Sons Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John
The Youngstown Welding & Engrg. Co.

### Roll Covers
The Cincinnati Rubber Mfg. Co.
The Goodyear Tire & Rubber Company
Stowe-Woodward, Inc.

### Roll Stands
Cameron Machine Co.
Frank W. Egan & Co.
Moore & White Co.
Potdevin Machine Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

### Rope Carriers
The Moore & White Co.

### Rotary Boilers
The Biggs Boiler Works Co.

### Rotary Steam Joints
Johnson Corp.
The Moore & White Co.
Perfecting Service Corp.

### Rubber Products
The Goodyear Tire & Rubber Company

### Saturants
American Anode Div., The B. F. Goodrich Chem. Co.

### Saturating Machines
Black-Clawson Company
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Noble & Wood Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

### Savealls
Bird Machine Company
Hardinge Company

### Scales
Fairbanks, Morse & Co.
Merrick Scale Mfg. Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

### Screen Plates
Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.

### Screens
Allis-Chalmers Mfg. Co.
American Paper Mchy. & Engrg. Works, Inc.
Appleton Wire Works
Appleton Machine Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

### Sheet Machines
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Suburban Machine Co.
Valley Iron Works Co.

### Shower Pipes
Bird Machine Company
DeZurik Shower Company
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Shartle Bros. Mach. Co.
Smith & Winchester Mfg. Co.

### Shredders
Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.

### Sizing
American Cyanamid Company, Industrial Chemicals Division
Black-Clawson Company
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Glidden Company
Hercules Powder Co.
Monsanto Chemical Company
National Aluminate Corp.
Philadelphia Quartz Co.
Stein-Hall Co., Inc.

### Sizing Tester
W. & L. E. Gurley

### Slime Control
W. A. Cleary Corp.
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
National Aluminate Corp.
Rohm & Haas Co.

### Slitters
Black-Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Machinery & Prod. Engrg. Corp.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Valley Iron Works Co.
Waldron Corp., John

### Smoke Stacks
William Allen Son's Company
The Biggs Boiler Works Co.

### Splicing Tissue
Williams-Gray Co.

### Softness-Stiffness Tester
W. & L. E. Gurley
Testing Machines, Inc.

### Soluble Oils
Adell Chemical Company
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

### Solvents
Adell Chemical Company

### Stainless Steel
American Cast Iron Pipe Co.
Armco Steel Corp.
Ingersoll Steel Div., Borg-Warner Corp.
Michigan Steel Casting Co.
The Midvale Company
U. S. Steel Corp.

### Starch
American Cyanamid Company, Industrial Chemicals Division
A. M. Meincke & Son, Inc.
Clinton Industries, Inc.
National Starch Products Inc.
Stein-Hall Co., Inc.

### Steam Joints
The Moore & White Co.

### Steam Specialties
Babcock & Wilcox Co.
Cochrane Corp.
Combustion Engrg. Co., Inc.
Johnson Corp.
Midwest-Fulton Machine Co.
Perfecting Service Corp.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

### Steel
Allegheny Ludlum Steel Corp.
Armco Steel Corp.
Carnegie Illinois Steel Co.
Ingersoll Steel Div., Borg-Warner Corp.
Lukens Steel Company
Midvale Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

### Steel, Clad
Babcock & Wilcox Co.
Lukens Steel Company

### Steel Tanks
William Allen Son's Company
The Biggs Boiler Works Co.

### Strapping & Strapping Machines
The Stanley Works

### Stuff Chests
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

### Suction Boxes
Black-Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

### Suction Unit
Paper & Industrial Appliances, Inc.

### Sulphur
American Cyanamid Company, Industrial Chemicals Division
Texas Gulf Sulphur Co.
Witco Chemical Company

### Sulphur Burners
Valley Iron Works Co.

### Sulphur Dioxide
American Cyanamid Co., Calco Chemical Div.
Anaul Chemical Company
Virginia Smelting Co.

### Supercalenders
The Appleton Machine Co.
B. F. Perkins & Son, Inc.

### Synthetic Latices
American Anode Div., The B. F. Goodrich Chem. Co.
The Goodyear Tire & Rubber Company
Nopco Chemical Co.

### Tachometers
The Brown Instrument Co.

### Talc
American Cyanamid Company, Industrial Chemicals Division
W. H. Loomis Talc Corp.

### Tanks
William Allen Son's Company

# Where to Buy

The Biggs Boiler Works Co.
Cochrane Corp.
E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.
The Noble & Wood Machine Co.
B. F. Perkins & Son, Inc.
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Waldron Corp., John

**Tearing Testers**
Testing Machines, Inc.

**Tensile Testers**
B. F. Perkins & Son, Inc.
Testing Machines, Inc.

**Thickeners, Deckers and Savealls**
The Appleton Machine Co.
Bird Machine Company
Bulkley, Dunton Pulp Co., Inc.
Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Hardinge Co., Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Oliver United Filters, Inc.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Valley Iron Works Co.

**Timber Roof Truss Designs**
Timber Engrg. Co.

**Titanium**
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.
Witco Chemical Company

**Tools**
Ingersoll-Rand Co.
The Stanley Works
Walworth Company

**Tractors & Trucks**
Towmotor Corp.
Clark Equipt. Co., Clark Tractor Div.

**Transmissions**
Link Belt Company

**Traps**
Armstrong Machine Works
Cochrane Corp.
Crane Co.
Johnson Corporation
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

**Tubes**
Babcock & Wilcox Co.
National Tube Co.

**Tubing, Mechanical**
National Tube Co.

**Tubs**
Rodney Hunt Machine Co.
Shartle Brothers
Valley Iron Works Co.

**Turbines**
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company
Hunt, Rodney, Mach. Co.

**Turpentine Recovery**
Foster Wheeler Corp.

**Used Equipment**
Frank H. Davis Company
Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.
Suburban Machine Co.

**Valves**
Askania Regulator Co.
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
Crane Company
Dilts Machine Works
The Foxboro Company
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdy. & Mch. Co.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies
Trimbey Mach. Wks.
Valley Iron Works Co.
Walworth Company

**Washers**
Bird Machine Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
Oliver United Filters
The Sandy Hill Iron & Brass Wks.
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

**Waste Treating Equipment**
Alhydro, Inc.
The Dorr Company

**Water Conditioning**
Alhydro, Inc.
Calgon, Inc.
Cochrane Corp.
General Dyestuff Corp.
National Aluminate Corp.

**Water Dispersions**
Alhydro, Inc.
American Anode, Inc.
Rohm & Haas Co., Resinous Products Div.

**Waxes**
Hercules Powder Co.

**Waxing Machinery**
Black-Clawson Co.
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

**Welding Equipment**
Allis-Chalmers Mfg. Co.
General Electric Company
Walworth Company

**Wet Machines**
Black-Clawson Co.
Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Pusey & Jones Company
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

**Wetting Agents**
American Cyanamid Company, Industrial Chemicals Division
Adell Chemical Company
General Dyestuff Corp.
Hercules Powder Co.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

**White Water Heaters, self cleaning type**
Davis Engineering Corp.

**Winders and Rewinders**
The Appleton Machine Co.
Black-Clawson Company
Cameron Machine Co.
Dietz Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Langston Co., Samuel M.
Machinery & Prod. Engrg. Corp.
Moore & White Co.
Paper Converting Mch. Co.
Potdevin Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Waldron Corp., John

**Wire Brushes**
M. W. Jenkins Sons Inc.

**Wires**
Appleton Wire Works
Bulkley, Dunton Pulp Co., Inc.
International Wire Works
Lindsay Wire Weaving Co.
Williams-Gray Co.

**Wire Brushes**
Williams-Gray Co.

**Wood Splitters**
The Appleton Machine Co.
Carthage Machine Co.

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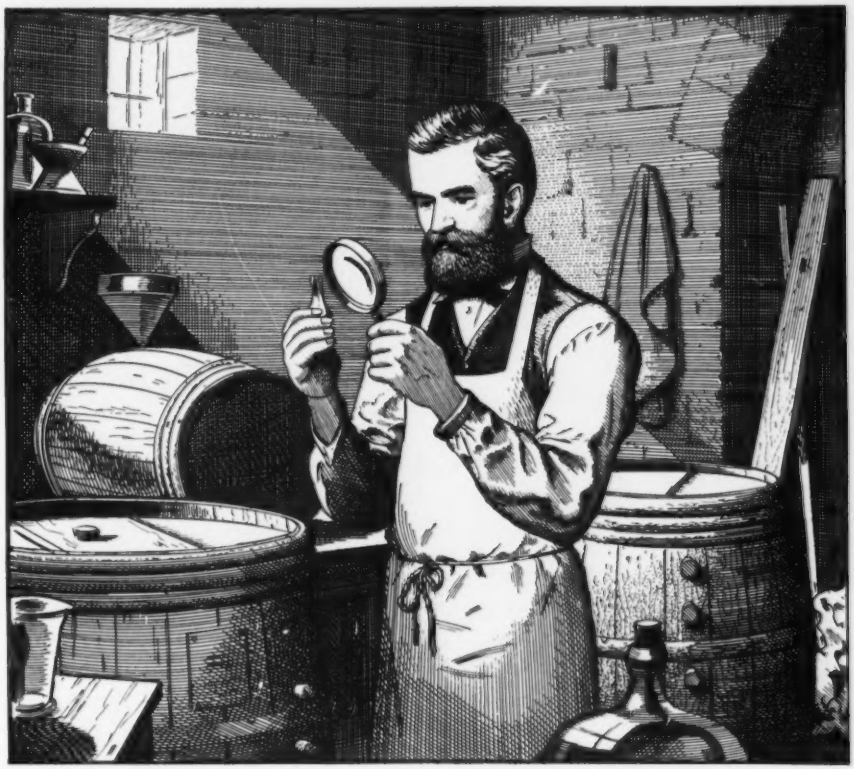

# The Idea that Revolutionized Papermaking

In 1860 paper was still made almost exclusively from rags. The feverish search for a substitute went on. Then, in 1865 there flashed into the mind of Benjamin C. Tilghman, a Philadelphia chemist, an idea that was to revolutionize papermaking the world over. While experimenting in his laboratory, he noted that sulphurous acid attacked the wood in his barrels and vats, breaking down and softening the wood fiber. Others before him had observed this, but Tilghman saw what a chemical method of softening wood into pulp might mean to the paper industry.

In a small mill at Manayunk, Pennsylvania, he put his theory to practice, proved its success and was granted the first United States patent for manufacturing wood pulp by the sulphite process. Thus Tilghman became a pioneer in producing paper from wood, helped spur the growth of America's pulp and paper industry.

*The dramatic story of paper is told in the sound-and-color film, "Paper — Pacemaker of Progress," and in a book under the same title. Both are presented by F. C. Huyck & Sons as a tribute to the Paper Industry. The book will be sent free upon request.*

**F. C. HUYCK & SONS · *Kenwood Mills* · RENSSELAER, N. Y.**

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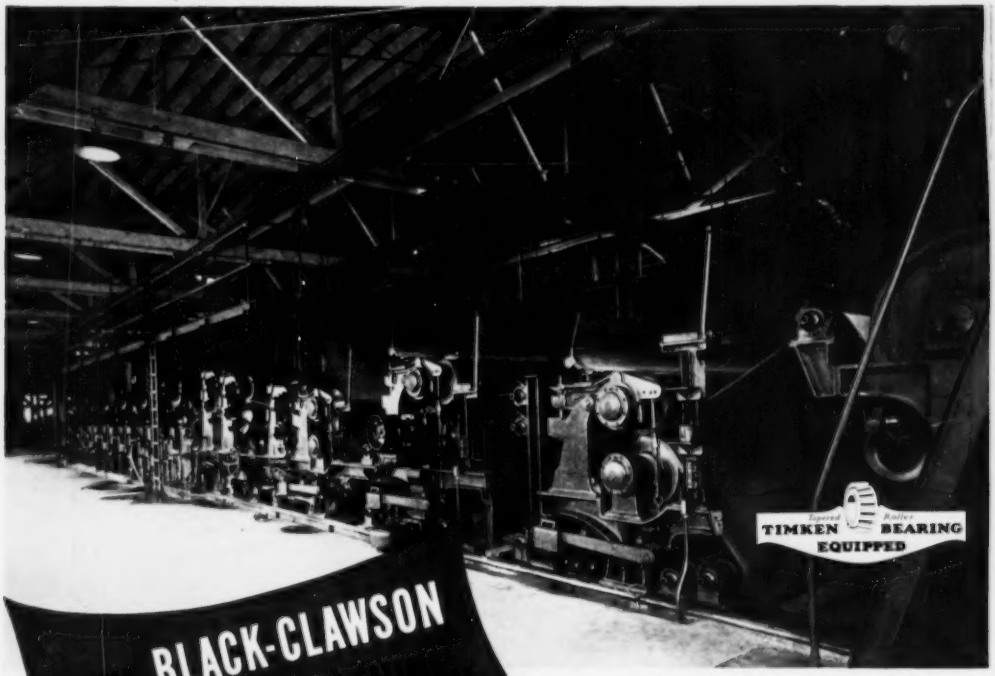


Wet end of Black-Clawson paperboard machine at Angelus Paper Box Company, Los Angeles.

# USES TIMKEN® BEARINGS

This is a six-cylinder board unit and represents the latest development in this kind of equipment. It is installed in the new mill of the Angelus Paper Box Company, Los Angeles, California.

In keeping with Black-Clawson practice over a long period of years, Timken tapered roller bearings are used at key positions to promote smooth, frictionless operation; to protect shafts against wear; radial, thrust and combined loads; and to assure constant alignment of moving parts.

The positions of the Timken bearings are as follows: extractor top rolls; tail rolls; couch rolls; squeeze rolls; automatic guides; felt rolls; felt beaters; suction press rolls; plain press rolls; paper rolls; blow rolls; draw and pinch rolls; and drive stands.

Wherever Timken bearings are applied, better performance, lower maintenance and longer equipment life are the rule. Make sure you have them in the equipment you build or buy. Look for the trade-mark "TIMKEN" on every bearing you use. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address "TIMROSCO".

TIMKEN
TAPERED ROLLER BEARINGS

NOT JUST A BALL ○ NOT JUST A ROLLER ⊂⊃ THE TIMKEN TAPERED ROLLER ⊂⊃ BEARING TAKES RADIAL ↓ AND THRUST →○← LOADS OR ANY COMBINATION ✣